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ILLUSTRATIONS

OF

BRITISH ENTOMOLOGY;

OR, A

Synopsis of Indigenous Insects:

CONTAINING

THEIR GENERIC AND SPECIFIC DISTINCTIONS;

WITH

AN ACCOUNT OF THEIR METAMORPHOSES, TIMES OF
APPEARANCE, LOCALITIES, FOOD, AND ECONOMY,
AS FAR AS PRACTICABLE.

BY JAMES FRANCIS STEPHENS, F.L.S.

MEMBER OF THE ZOOLOGICAL SOCIETY, ETC.

EMBELLISHED WITH COLOURED FIGURES OF THE RARER AND
MORE INTERESTING SPECIES.

HAUSTELLATA.

VOL. II.

“In his tam parvis tamque ferè nullis quæ ratio! quanta vis! quam inextricabilis perfectio!”—*Plin.*

“Finis Creationis Telluris est gloria DEI, ex opera Naturæ, per Hominem solum.”—*Linné.*

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BRITISH ENTOMOLOGY.

LEPIDOPTERA.

THE third division of this order of insects embraces the

LEPIDOPTERA NOCTURNA of *Latreille*,

Which have the *antennæ* setaceous, or diminishing gradually from the base to the apex; frequently ciliated, serrated, or pectinated, especially in the males, and sometimes simple: *wings*, during repose, horizontal, or deflexed, sometimes convoluted, or rolled round the body; the posterior retaining the anterior by a setiform process, as in the *Crepuscularia*. Larva various in form, with from ten to sixteen legs: food various: pupa smooth, the abdominal segments occasionally serrated, or denticulated; changes in the ground, or in a folliculus.

This group, which corresponds with the genus *Phalæna* of Linné, is evidently susceptible of subdivisions; but, from our confined knowledge of the structure, metamorphoses, and affinities of the Nocturnal Lepidoptera in general, it is impossible to define the limits of the various minor divisions with accuracy, or to place the whole naturally in one continuous or concatenated series; the innumerable anomalous forms rendering such a step perfectly impracticable at present: nevertheless, as the foundation of a building must be traced out before the superstructure can be raised, and the threshold must be passed ere we can advance into the temple, an imperfect sketch may contribute towards the attainment of that great object, which should ever guide the footsteps of the naturalist, the advancement of science; I shall therefore endeavour, in the following pages, to elucidate the affinities of this greatly neglected though highly beautiful and interesting division of insects.

Latreille, in the *Règne Animal*, divides the Nocturna into eight minor groups, and Dr. Horsfield, following the views of the learned author of the delightful *Horæ Entomologicæ*, conceives that the number of the latter is limited to three; but, as I have before observed, although I espouse the doctrine of a circular distribution

of natural objects, I do not hold to the quinary arrangement being universal; neither do I conceive that the three groups, here alluded to, are, *inter se*, of corresponding value either with the two which have been already discussed in my foregoing volume, and which complete the quinary circle of Dr. Horsfield, or with the families of Coleopterous insects, illustrated in the first part of the *Annulosa Javanica*. Upon these considerations, therefore, I shall adhere to my former plan of merely characterizing the group, which is apparently connected by affinity with the one previously treated upon; premising that the number of groups, in my opinion, appears to be more than three, but less than eight: it is, however, not without diffidence that I venture to hazard such a conjecture*. The group in immediate contact with the *Crepuscularia* doubtless consists of that portion of the *Phalænæ Bombyces* of Linné which possess the subjoined characters, and may be designated from the period of their flight

LEPIDOPTERA POMERIDIANA.

Palpi usually two, short, generally cylindric: *maxillæ*, or *tongue*, none, or very short, somewhat membranaceous, and not convoluted: *antennæ*, at least in the males, more or less ciliated or pectinated, sometimes serrated: *head* small: *thorax* rarely crested: *body* usually stout, often woolly at the apex: *wings* elongate, trigonate, mostly deflexed, undivided. Larva with sixteen feet, the anal ones sometimes spurious.

The typical insects of this subdivision are remarkable for the great expansion of their wings, broadly pectinated antennæ, comparatively small body, and the absence of a tongue: they are of the highest utility to mankind; their larvæ constructing cocoons of pure silk, the produce of which gives employment to millions of human beings; but none of the more useful species are indigenous to Britain: the less typical larvæ mix pieces of leaves, dirt, saw-

* Although I agree with Dr. Horsfield (whose recent valuable labours have, in some measure, guided me in the following arrangement), that the metamorphoses afford important characters for the division of the larger groups, I conceive that a system constructed upon that principle *alone* is as liable to objection as if founded upon the consideration of any other *single* character; nevertheless, that it does point out such groups generally, I think is too evident to admit of a question, but there are several weighty reasons which render it necessary for practical purposes to search for other characters, of which the most prominent is the difficulty of ascertaining the larvæ of each species: I shall, therefore, consistently with the observation in Vol. I. p. 5, continue to employ the metamorphoses as a secondary character.

dust, &c. with their cocoons, or construct them of slight silken materials, while others are furnished with the means of forming a hard semi-transparent case, in which they change to pupæ. Although several of the species are crepuscular insects, many of the Bombycidæ commence their aerial excursions in the afternoon, when they may be observed flying with great velocity, and describing large undulated tracks in their course.

In dividing this section into four families only, I am in doubt whether the Saturniæ should not be separated from the Bombycidæ, from which they differ by their broad horizontally extended wings, short deeply pectinated antennæ (serrated in the female), and by the nudity of the larvæ, which have merely a verticillated series of hairs on each segment.

<i>Maxillæ</i>	{ nullæ: <i>Antennæ</i>	{ moniliformes, aut setacæ: . . .	1. HEPIALIDÆ.
			3. BOMBYCIDÆ.
	{ plus minusve con- spiciuæ, . . .	{ brevissimi: . . .	2. NOTODONTIDÆ.
			4. ARCTIIDÆ.

FAMILY I.—HEPIALIDÆ.

Antennæ short, moniliform, simple, or furnished with a single row of denticulations, or cilia; sometimes rather elongate, pectinated, or tomentose at the base, with the apex simple: *tongue* wanting: *palpi* none, or distinct: *wings* deflexed, long, and narrow: *thorax* not crested.

Larvæ reside in the interior of vegetables; fleshy, naked, with six pectoral, eight abdominal, and two anal feet: pupa with the segments denticulated on the sides.

That the Hepialidæ are closely allied to the Sphingidæ may be shown by a reference to the genus *Smerinthus*, which bears considerable resemblance to some of the gigantic individuals of this family: in *Smerinthus* the tongue is very short, the thorax and body stout and thick, the antennæ rather short, more or less serrated, and the wings strongly nerved; characters which obtain more or less amongst the Hepialidæ: again, the habits of the larva are not widely dissimilar to those of the *Ægeriidæ*; the larvæ of the genera *Cossus* and *Zeuzera* perforating the solid wood of trees, while those of *Hepialus* devour roots.

The British genera may be thus distinguished:

<i>Antennæ</i>	{ subfiliformes; thorace multo breviores: . . .	{ internè denticulati: . . .	31. HEPIALUS.
			33. COSSUS.
			32. ZEUZERA.

GENUS XXXI.—HEPIALUS, *Fabricius*.

Antennæ much shorter than the thorax, subfiliform or moniliform, sometimes pectinated or serrated: *palpi* obsolete: *wings* oblong-lanceolate, subequal: *head* small: *thorax* woolly: *abdomen* rather stout, elongate, the apex tufted in the males: *tibiæ* unarmed. *Larva* subterranean, radicivorous: *pupa* elongate, rather stout, obtuse, with two parallel rows of spinous processes: changes in a web amongst the food of the larva.

The genus *Hepialus* is remarkable for several peculiarities, of which the sexual disparity is not the least important; but this dissimilarity is more apparent than real, and the sexes may be readily united by a practised eye, as the chief distinctions generally consist of the larger size and dissimilar colour of the female, the marking in most instances being similar in both sexes: another peculiarity is the absence of trophi; and a third the want of tarsi in one sex of *He. hectus*. There are other distinctions by which the genus may be readily divided into sections.

They fly early in the evening, and with considerable rapidity, whence their name of *Swifts*, and two of the species, *He. hectus* and *Humuli* are distinguished from their congeners by their vacillating flight, which probably depends upon the structure and appendages to their tibiæ, the former species having the hinder tibiæ clavate, without tarsi, and both having them furnished with elongate simple or scaly hairs. The females deposit their eggs with force, and in rapid succession.

A. *Antennæ* simple in both sexes.

Sp. 1. *hectus*. *Alis anticis maris luteis, strigis tribus obliquis punctato-interruptis aureis; feminae brunneis fasciis duabus cinerascensibus, posticis fuscis.* (Exp. alar. 1 unc.—1 unc. 4 lin.)

Ph. No. *hectus*. *Linné.—Don. viii. pl. 274. ♂.—He. hectus. Steph. Catal. No. 5944.*

Male with the anterior wings rich fulvous or luteous, with three oblique moniliform golden fasciæ, and a minute spot of the same colour at the base; the anterior fascia is towards the base of the wing on the interior margin, and is abbreviated towards the costa; the second commences about the middle of the interior margin, at first parallel with the preceding, it then suddenly bends towards the apex of the costa, where it terminates; the third is in the posterior margin, and is composed of minute dots; the posterior wings are dusky: hinder tibiæ clavate, with elongate scaly hairs, tarsi wanting. Female very dissimilar; anterior wings livid-ash, with three oblique, rather obsolete, pale

fuscous-brown fasciæ, the two anterior obsoletely bifid towards the costa; the third fascia on the posterior margin: legs perfect.

Var. β . Male with the anterior wings deep fulvous-brown, with the golden fasciæ united into distinct strigæ, and the costa maculated with paler fulvous.

Both sexes vary considerably; the central golden fascia on the anterior wings of the male arises frequently from a large patch of gold; and the posterior wings are sometimes speckled with gold on the hinder margin. The female has the strigæ differing considerably in form.

Dr. Leach has distinguished this species in his MSS. by the name *Chelonus*.

Not uncommon throughout the metropolitan district in the middle of June, frequenting open places in woods, where it may be observed early in the evening, at a short distance from the ground, performing its singular vaccillating flight, which has not inaptly been compared to the motion of a pendulum. I presume that it occurs throughout the country, as I have received it from Devonshire, and Mr. Marshall informs me that he took it not uncommonly in Cumberland.

Sp. 2. *lupulinus*. *Alis anticis maris luteis, fæminæ cinerascentibus, lineolâ mediâ fasciisque duabus albis externâ punctato-interruptâ; posticis cinereis.* (Exp. alar. ♂ 1 unc.—1 unc. 3 lin. ♀ 1 unc. 3—7 lin.)

Ph. No. *lupulina*. *Linné*.—Ph. hecta. *Harris*, pl. 22. f. 1.—*He. lupulinus*. *Steph. Catal. No. 5945.*

Anterior wings more or less luteous or fulvous, with a central longitudinal streak, an oblique moniliform striga, reaching from the base nearly to the interior margin, and united at an obtuse angle with another, which terminates at the costal apex, pure snowy white, finely cinctured with fuscous; beyond the outer oblique stria is sometimes a row of fuscous or white spots: posterior wings fuscous, immaculate. Female dusky-ash, with dirty-white moniliform strigæ.

Var. β . With the anterior wings of the male nearly immaculate dusky-fulvous, and of the female plain dirty-ash.

Var. γ . With the anterior wings slightly spotted with white.

Var. δ . With the anterior wings deep fulvous-brown, spotted with deeper brown, and having the moniliform strigæ united with continuous white streaks, with a very distinct series of white spots on the hinder margin.

Var. ϵ . Anterior wings dirty-white, with the costa, a lunate discoidal spot, and some irregular maculations on the hinder margin, dusky-fulvous.

Var. ζ . Anterior wings white, with the costa alone fulvous-brown.

No species of *Hepialus* is more subject to vary than this; but in all the varieties the cilia are fulvous, and the posterior wings immaculate: both sexes of each variety occur; and every possible shade of variation may be obtained without much difficulty.

Caterpillar dusky, spotted with black.

This variable insect appears in profusion in grassy meadows towards the end of May.

Sp. 3. Humuli. *Alis flavis, anticis fulvo-striatis, maris omnibus niveis.* (Exp. alar. ♂ 1 unc. 8 lin.—2 unc. 1 lin.: ♀ 1 unc. 10 lin.—3 unc.)

Ph. No. Humuli. *Linné.*—*Don.* viii. pl. 274. f. 1. ♂. f. 2 ♀.—*He.* Humuli. *Steph. Catal.* No. 5946.

Male with all the wings above pure snowy immaculate white, with a slender lutescent margin, beneath fuscous, with the margins broadly fulvous: the head, thorax, and abdomen very pale fulvous. Female very dissimilar, the anterior wings above yellow, with various spots or streaks, sometimes united into two or three oblique fasciæ; posterior wings fuscous, gradually changing to a bright fulvous on the hinder margins; beneath all the wings dusky: eyes in both sexes black.

The fulvous spots on the anterior wings of the female vary exceedingly in size, form, and disposition: they are sometimes nearly obliterated.

Caterpillar rather glossy cream-colour, with the head brown, and a scaly patch on the neck: it feeds on the roots of the hop (*Humulus Lupulus*), and burdock (*Arctium Lappæ*): it changes in May to a dark brown pupa.

Very common in grassy places in the middle of June, and not unfrequently met with in church-yards, whence its name of Ghost Moth.

Sp. 4. velleda. *Alis fusco, livido alboque variis, strigâ posticâ punctorum niveorum costâque fusco maculatâ.* (Exp. alar. ♂ 1 unc. 8—10 lin.: ♀ 2 unc. 2—6 lin.)

Bo. velleda. *Esper.*—*He.* velleda. *Steph. Catal.* No. 5947.—*Ph.* No. Mappa. *Don.* x. pl. 36. f. 3.

Brown: anterior wings above fuscous, with a bifid angulated, strongly waved irregular whitish vittâ, arising at the base, and passing somewhat parallel with the thinner margin nearly to the anal angle, where it is suddenly angulated, and passes obliquely to the anterior apex; the disc is variegated with patches of a similar hue, pure white and livid; behind the oblique fascia is usually a striga of whitish subtriangular spots: costa with a few brown spots: posterior wings immaculate fulvous-brown: cilia of all the wings flavescent, spotted with brown. Female larger, less varied, and without the livid hue.

The markings of this species vary so greatly, that it is difficult to obtain two specimens perfectly similar; in some the livid hue predominates, in others the brown; the sinuated fascia is sometimes interrupted, at others much branched, and the posterior streak of white spots occasionally extends across the apex of the wing, and is sometimes totally obliterated.

Caterpillar is said to feed on the fern (*Pteris aquilina*).

Before the year 1814, few specimens only of this insect were in collections; but, in the middle of June in that year, a locality was detected at Darent-wood, where the insect abounds: it also in-



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habits other parts. "Near Alderley, in Cheshire."—*Rev. E. Stanley*. "In Derbyshire."—*Rev. W. T. Brce*.—"Near York, scarce."—*W. C. Hewitson, Esq.* "Salisbury, and Scotland."—*Dr. Leach*.

Sp. 5. *carnus*. PLATE 13. f. 1. ♂. *Alis anticis cinerascentibus, aut lividis, nubeculosis, maculis fuscis albisque seriatim sparsis, posticis cinereis.* (Exp. alar. ♂ 1 unc. 8—10 lin. ♀ 2 unc. 3—6 lin.)

He. *carnus*. *Fabricius*. *Steph. Catal. No. 5948.*

Somewhat resembling the last, but less variegated: anterior wings above cinerascens or livid, with an irregular pale maculiform streak on the thinner margin, united to an oblique one, which reaches to the costa at the anterior apex; this last streak is sometimes irregularly duplex, at others simple, and nearly straight; the disc is also a little clouded with fuscous and whitish, and has a conspicuous white spot, sometimes encircled with black, a little beyond the centre, but towards the costa; posterior wings plain fuscous or livid: the cilia of all flavescent, more or less spotted with dusky. Female livid, the anterior wings nearly immaculate.

Frequently taken in the north of England, sometimes in company with the last; I obtained a specimen from the collection of the late Mr. Francillon. "Near Birmingham."—*Mr. Weaver*.

B. Antennæ pectinated, or serrated.

Sp. 6. *sylvinus*. *Alis anticis maris rufo-lutescentibus, fæminæ cinnamomeis, lineis duabus obliquis albis, posticis cinereis.* (Exp. alar. ♂ 1 unc. — 1 unc. 4 lin. ♀ 1 unc. 6—10 lin.)

Ph. No. *sylvinus*. *Linné*.—He. *sylvinus*. *Curtis, iv. pl. 185.* *Steph. Catal. No. 5949.*

Male above fulvous; anterior wings variegated with rufescent or castaneous spots, with a slightly sinuated oblique white streak near the base, and another from the apex, united at right angles with the former on the inner margin; the latter is generally accompanied by a fuscous streak internally; and the disc has a fuscous spot near its centre, bounded interiorly with white, the costa is also spotted with fuscous, each spot being encircled with white, between the oblique white streak and the hinder margin, and at the base of the cilia, are usually two rows of lunulated brown spots: cilia immaculate fulvous: posterior wings fuscous, with the hinder margin fulvous. Female nearly similar in markings, but brown, with a large patch of dirty white at the base of the anterior wings, and a row of dusky spots on the costa.

Like its congeners, this species varies exceedingly: in some cases the males are pale-ochraceous, with the usual markings, in others nearly fuscous; and I possess a large rufescent female: the moniliform striga parallel with the hinder margin is more frequently obsolete than present.

Found, in August and September, by the skirts of woods, and in lanes; not uncommon at Birch-wood; near Hertford, and in a lane near Stoke Newington. "Near York, males abundant, females scarce."—*W. C. Hewitson, Esq.*

GENUS XXXII.—ZEUZERA, *Latreille*.

Antennæ not so long on the thorax, setaceous, of the males pectinated at the base, with the apex simple; of the females entirely simple, with the base tomentose: *palpi* obsolete: *wings* entire, elongate, lanceolate, unequal. *Head* small, tomentose: *thorax* stout, thickly clothed with hair: *abdomen* not very robust, much elongated, attenuated, clothed with short hair: *legs* rather long, *shanks* unarmed. *Larva* residing in the trunks of trees, lignivorous; *pupa* enclosed in a case of wood, cemented by a glutinous substance.

Zeuzera may be known from *Cossus* by the structure of its antennæ, which in both sexes have the apical half simple, the male having the base alone pectinated, and the female tomentose: it also differs in the form and texture of its wings, and slenderness of its tomentose body: by the former character it differs from *Hepialus*.

Sp. 1. *Æsculi*. *Alis nudiusculis niveis, punctis numerosis cæruleo-nigris, thorace maculis duodecim atris.* (Exp. alar. ♂ 2 unc. 2 lin.: ♀ 2 unc. 8—10 lin.)

Ph. No. *Æsculi*. *Linné*.—*Don*. v. pl. 152. *Zeus*. *Æsculi*. *Steph. Catal.* No. 5950.

Anterior wings somewhat naked and hyaline: snowy white, with the costa and nervures yellowish; thickly sprinkled throughout with numerous bluish-black spots: posterior faintly spotted towards the base, with the inner angle immaculate, and the margin itself with a row of a deeper hue: thorax snowy, with about twelve dark bluish-black spots: abdomen clothed with short dark-coloured down, with a bluish metallic hue. Female considerably larger, with the nervures more distinctly yellowish, and the spots of a brighter blue.

Caterpillar ochraceous-yellow, with black dots, the head and tail black: it feeds on the wood of the pear and apple, walnut, elm, lime, horse-chestnut (*Æsculus Hippocastanum*), ash, beech, birch, oak, &c.: it changes to a pale-brown pupa within a case formed of the dust of the wood cemented together: it appears in the imago state in the beginning of July.

This is decidedly somewhat rare, but if industriously sought for in its usual haunts, it may be obtained: it appears to inhabit a considerable portion of Britain, and has been often taken in and near London. "Near Ipswich."—*Rev. W. Kirby*. "Allesley, Leamington, and Coleshill."—*Rev. W. T. Bree*. "At Long Parish, near Andover."—*Rev. G. T. Rudd*. "Abundantly near

London, in July last.”—*T. Marshall, Esq.* “Epping.”—*Mr. Doubleday.* “Bottisham, and near Cambridge, female apparently not very rare.”—*Rev. L. Jenyns.* “Kennington.”—*Mr. Davis.*

GENUS XXXIII.—COSSUS, *Fabricius.*

Antennæ as long as the thorax, setaceous, furnished on their inner edge with a single series of short, transverse, obtuse teeth: *palpi* two, distinct, cylindric, thickly clothed with scales, three-jointed: *wings* entire, anterior larger than the posterior. *Head* small, with a pilose crown: *thorax* stout, scaly: *abdomen* robust, elongate: *tibiæ* with spurs. *Larva* residing in the trunks of trees, lignivorous: *pupa* enclosed in a case composed of rotten wood and gluten.

Cossus differs from Hepialus by the elongated antennæ, robust body, and inequality of the wings; and by the presence of distinct, somewhat elongated palpi: from Zeuzera it may be known by the antennæ, which in the latter genus are not serrated.

One indigenous species only has been detected, the history of which has been most admirably detailed by De Geer and Lyonet; the latter author having published an entire volume, containing the description of the larvæ alone, and collected sufficient materials to fill another with those of the pupa and imago; the former being accompanied by most accurately-detailed anatomical plates; and the publication of the latter being, I believe, shortly about to take place, with similar embellishments.

Sp. 1. ligniperda. *Alis albo-cinereis, fusco-nebulosis, strigis transversis atris, thorace exalbido postice fasciâ atrâ, abdomine annulis albis.* (Exp. alar. ♂ 2 unc. 10 lin.—3 unc. 3 lin.: ♀ 3 unc. 6—9 lin.)

Co. ligniperda. *Fabricius.*—*Curtis, ii. pl. 60.*—*Steph. Catal. No. 5951.*

Anterior wings clouded with whitish-cinereous and brown, with numerous transverse irregular black streaks and reticulations, varying considerably in different specimens; posterior fuscous, with obscure reticulated streaks towards the hinder margin: head dusky-brown: anterior margin of the thorax pale ochraceous, the following deep fuscous, then whitish, with a posterior, transverse, black fascia; abdomen brown, with the margins of the segments whitish-grey.

Caterpillar dull-yellow or rufescent, with large subquadrate chestnut-red shining patches on the back, and two triangular black spots behind the head, the latter entirely black: it feeds upon oaks, willows, aspens, and poplars, and is very destructive; it is three years in attaining perfection, and may consequently be obtained at any period: in the autumn, and occasionally in May, the larvæ may be found while searching for a convenient spot to change to pupa, which it does in a case composed of pieces of wood, which it unites

with a glutinous substance, and lines internally with silk: the pupa is brown, and strongly denticulated on the margin of each segment.

Not uncommon in the south of England at the end of June and beginning of July. “Infests the oaks in every wood and lane near Kimpton.”—*Rev. G. T. Rudd*. “Bottisham, not uncommon.”—*Rev. L. Jenyns*. “Near Deptford, abundantly, in June last.”—*Mr. Newman*.

FAMILY II.—NOTODONTIDÆ*.

Palpi more or less evident, two, rarely four, in number, sometimes elongate, very hairy: *maxillæ* usually distinct, not spiral, resembling two slender filamentous processes. *Antennæ* moderate, more or less bipectinated, especially in the males, or setaceous, frequently serrated or ciliated in the females: *body* not very stout, the apex of the males tufted; *wings* deflexed, entire. Males smaller than the females. *Larva* sparingly covered with hairs, or naked, greatly diversified in form, frequently with one or more elevated tubercular appendages, the two anal legs sometimes converted into a furcate tail: *pupa* often folliculated, sometimes subterranean.

Notwithstanding the abbreviated rudimentary tongue with which the insects of this family are furnished, the general habit, structure, and metamorphoses of the latter present more essential characters of affinity to the *Hepialidæ* than are offered by the *Bombycidæ*, which are usually placed next in succession, from being, in common with the *Hepialidæ*, destitute of that generally important organ. The larvæ of this family are mostly naked, or very slightly hairy, and are generally furnished with one or more elevated tubercular points; they are fleshy, and have in general sixteen perfect legs; but in some of the genera the two anal ones are transformed into caudal appendages: the pupa is frequently subterranean; though it is often enclosed in a folliculus, or in a hard case formed of various materials, united by gluten.

The following indigenous genera appear to belong to this family, and may be discriminated by the subjoined external characters:

* Many of the species of this family have been frequently arranged amongst the true *Le. nocturna*; but they have evidently more affinity to the other *Noto-dontidæ* than to the *Noctuæ*, both in their larva and perfect states.

Alarum dorso	haud dentato: Thorax	cristatus: {	denticulatæ: . . .	34. PYGÆRA.		
			Alæ {	integre: {	breves, arcuatæ: . . .	35. CLOSTERA.
		haud cristatus: Alæ {	Antennæ {	subelongatæ, rectæ: . . .	36. EPISEMA.	
	elongatæ, {		subhyalinæ: . . .	37. CERURA.		
	dentato, apice: {	plusminusve denticulato, dorso {	unidentato: Thorax {	opacæ, {	nullis elevatis: . . .	45. PETASIA.
				elevatis: . . .	38. STAUROPUS.	
		integro: {	pilosæ: . . .	subdiaphanæ: . . .	43. PTILOPHORA.	
						alæ {
		haud cristatus: Alæ antice {	vix elongatæ, apice obtuso: . . .	39. NOTODONTA.		
					elongatæ, apice subacuto: . . .	40. LEOCAMPTA.
		cristatus: . . .	41. LOPHOPTERYX.			
				bidentato: . . .	42. PTILODONTIS.	

GENUS XXXIV.—PYGÆRA, *Ochsenheimer*.

Palpi short, porrect, densely pilose, two-jointed, basal joint incurved, second reversed, obtuse. *Antennæ* rather long, pectinated in the male, each articulation producing a duplex cilia on each side, the apex simple; setaceous in the female: *head* small, with a bifid crest at the base of the antennæ: *thorax* stout, strongly crested, with two elevated lateral strigæ: *abdomen* long, the apex with an undivided tuft: *wings*, anterior elongate, triangular, the apex with a large rounded discolorous patch, the hinder margin denticulated; *posterior* entire: *tibiæ* with spurs. *Larva* cylindric, pilose, without elevated appendages, the anal legs perfect: *pupa* subterranean.

Pygæra appears to be far more closely allied to Cossus than to any other genus amongst the Pomeridiana; its thickened and somewhat denticulated antennæ, stout thorax and abdomen, the latter considerably elongated, and the texture of the elongate-subtriangular wings, offering far more important points of similarity to the Hespialidæ than are furnished by the broad subdiaphanous rounded wings, comparatively slender thorax and abdomen, the latter abbreviated, and deeply pectinated antennæ of the Saturniæ, which are usually considered as forming a direct passage from the family last mentioned to the other Pomeridiana.

Sp. 1. bucephala. *Alis argenteo-cinereis, strigis duabus geminatis ferrugineis, maculâque magnâ terminali flavâ.* (Exp. alar. ♂ 2 unc. 2—6: ♀ 2 unc. 8—11 lin.)

Ph. Bo. bucephala. *Linné*.—*Don*. i. pl. 3, ♂.—*Py. bucephala*. *Steph. Catal.* No. 5952.

Anterior wings of a rich clouded silvery ash, with a faint black transverse striga at the base, then a duplex one, anteriorly ferruginous, posteriorly black, and towards the apex a third, also duplex, somewhat flexuous and interrupted, anteriorly black, and posteriorly ferruginous; between which and the apex is a large rounded yellow patch, a little clouded with ochraceous or luteous; the hinder margin with lunular ferruginous spots; the cilia flavescent, spotted with ferruginous: posterior wings whitish, slightly suffused with dusky on the disc, with a few obscure ferruginous spots on the cilia: head and thorax anteriorly yellow, surrounded by a double dusky-ferruginous striga; the sides and posterior margin of the thorax hoary-cinereous: abdomen pale-yellow, with row of dusky-spots on each side.

Caterpillar pilose, tawny yellow, each segment with elongate black spots placed longitudinally, and interrupted at the joints, forming a series of interrupted parallel black streaks; head black; legs outwardly black, inwardly luteous: it feeds on the lime, oak, willow, alder, elm, and chestnut: is full grown in September, when it changes beneath the ground to a brown pupa with two spines at the apex.

Very abundant, towards the middle or end of June, throughout the metropolitan district. “Common near Andover.”—*Rev. G. T. Rudd*. “Bottisham and Ely, the larva in some seasons in great profusion on the elm, which they almost strip of its leaves.”—*Rev. L. Jenyns*.

GENUS XXXV.—CLOSTERA, *Hoffmansegg*.

Palpi short, porrect, slightly ascending, and pilose, triarticulate, the apical joint minute. *Antennæ* short, curved, pectinated to the apex in both sexes; in the males especially; with a fascicle of scales at the base: *head* very minute, concealed beneath the *thorax*, the latter robust, strongly crested, with a central coloured longitudinal patch: *abdomen* moderate, the apex suddenly attenuated, with a bifid tuft: *wings*, *anterior* elongate, the hinder margin entire, the apex with a more or less discoloured patch; *posterior* entire; *tibiæ* with spurs. *Larvæ* slightly pilose, with a tubercle on the fourth, and another on the anal, segment, posterior legs perfect: *pupa* folliculated.

From *Pygæra* this genus differs by the brevity of the antennæ, which are pectinated in both sexes, and distinctly curved; by the form of the thoracic crest, and the longitudinal patch thereon; the deeply inserted, minute head; and by the integrity of the posterior margin of the anterior wings: the larva differs in being very slightly pilose, and in having the fourth and anal segment tuberculated above.



Sp. 2. *reclusa*. *Alis anticis glauco-cinerascentibus, strigis quatuor albidis subanastomosantibus, maculâ apicis ferruginèâ punctoque marginali albo, posticis fuscis.* (Exp. alar. ♂ 1 unc.—1 unc. 2 lin.: ♀ 1 unc. 1—3 lin.)

Bo. *reclusa*. *Fabricius*.—Ph. *anastomosis*. *Don.* iv. *pl.* 124.—Cl. *reclusa*. *Steph. Catal. No.* 5954.

Brown: anterior wings of a glaucous, or brownish-ash, with four subinterrupted, anastomosing, whitish strigæ, with a white spot on the costa, at the origin of the fourth, and a reddish-brown patch adjoining, which does not reach to the apex; hinder margin with an undulated series of dusky spots: posterior wings dark brown: centre of the thorax anteriorly dusky-chocolate; sides of the thorax cinereous: abdomen plain brown, with the anal fascicles chocolate at the apex.

Var. β? *PLATE 16. f. 1.*—Rather larger, the posterior wings pale glaucous-ash, with two angulated fuscous transverse strigæ: the anterior wings with the third striga united obliquely with the fourth on the interior margin.

Caterpillar brown, with a broad dorsal line, yellowish at first, but after the last moult whitish, the sides with a catenated series of yellow circles: head and tail yellow, or rufescent, legs black: it is found in September, and feeds on the aspen (*Populus tremula*): pupa brown, with the abdomen paler.

Not a common species; taken occasionally at Darenth and Birch woods, at the end of May. “Epping, rare.”—*Mr. Doubleday*. “Once taken in Cambridge, by Mr. Dale.”—*Rev. L. Jenyns*. “Dublin.”—*Rev. J. Bulwer*.

† Sp. 3. *anachoreta*. *Alis griseis strigis albidis, maculâ apicis fusco-ferruginèâ lineâ undatâ albâ.* (Exp. alar. ♂ 1 unc. 3 lin. ♀ 1 unc. 4 lin.)

Bo. *anachoreta*. *Fabricius*.—Cl. *anachoreta*. *Steph. Catal. No.* 5955.

Anterior wings griseous, with four whitish strigæ, the third anteriorly abbreviated, the fourth flexuous, nearly white, and extending to the anterior margin; the apex with a large obconic rusty-brown spot, extending to the margin of the discoidal areolet, and divided by the posterior white flexuous striga;

† Sp. 1. *anastomosis*. *Alis griseis ferrugineo fuscoque variis, strigis tribus albidis subanastomosantibus, thorace ferrugineo.* (Exp. alar. 1 unc. 8—10 lin.)

Ph. Bo. *anastomosis*. *Linné*.—*Stewart*, ii. 252. (!)—Ch. *anastomosis*. *Steph. Catal. No.* 5953.

Wings griseous, varied with ferruginous and brown, with three whitish subanastomosing strigæ; the apex with a rusty spot: the thorax with a ferruginous central patch.

Stewart introduces this fine species as an indigenous insect; but I presume that his only authority for its admission rested upon the erroneous appropriation of the name to Cl. *reclusa*, as I have never seen an example in any British collection.

towards the anal angle are two black spots, the inner one largest: posterior wings dusky-ash: thorax with a fuscous patch anteriorly.

Caterpillar brown, with a flesh-coloured, spotted, dorsal line, the protuberances and spots on the sides rufescent: it feeds on willows and poplars: pupa brown.

The only specimens I have seen of this fine insect are in the collection at the British Museum; I am not aware of their locality: Dr. Leach obtained them from the collection of Mr. Spratt.

Sp. 4. *curtula*. *Alis glaucis, strigis quatuor pallidis maculâque apicis testaceâ.* (Exp. alar. ♂ 1 unc. 4—5 lin. ♀ 1 unc. 4—6 lin.)

Ph. Bo. *curtula*. *Linné*.—Ch. *curtula*. *Steph. Catal. No. 5956.*

Griseous: somewhat allied to the last: anterior wings glaucous or greyish-ash, with four nearly straight whitish strigæ, the outer, or fourth, a little flexuous towards the costa, where it terminates in a white spot: beyond this the apex is of a bright testaceous-brown, with an obsolete row of dusky spots: posterior wings greyish-ash: thorax anteriorly, and on the back rufous-brown, the sides cinereous, or faintly tinged with reddish: abdomen with its tuft reddish-brown at the apex.

Caterpillar cinereous, with four rows of ferruginous spots: it is found in September, feeding upon poplars and willows.

Taken occasionally near London towards the end of April, or beginning of May, but far from common. “Wanstead, on the aspen.”—*A. Cooper, Esq.* “Coleshill.”—*Rev W. T. Brce.*

GENUS XXXVI.—EPISEMA, *Ochsenheimer*.

Palpi elongate, very pilose, biarticulate, the basal joint large, the terminal very slender elongate, acute, scaly: *maxillæ* short. *Antennæ* rather elongate, not curved, bipectinated to the apex in the males, simple in the females: *head* exserted; not very small: *thorax* slightly crested with transverse fasciæ: *abdomen* rather stout, with a simple tuft at the apex: *wings* elongate, anterior entire on the hinder margin; *cilia* long: *legs* very hairy; *tibiæ* with spurs. *Larva* cylindric, very fleshy and robust, not tuberculate; the hinder legs perfect: *pupa* folliculated.

In the texture of its wings, and in the comparative robustness and magnitude of its larva, this genus unquestionably resembles the following, although the structure of the latter and that of the imago offer several points of distinction: the location of the genus has been frequently changed; but the short filamentous tongue appears to point out the present family as its true situation.

Sp. 1. *cæruleocephala*. *Alis cinerco-griseis, stigmatibus albidis coadunatis inter strigas duas fuscas, fasciâque marginali cinerâ.* (Exp. alar. ♂ 1 unc. 3—5 lin.: ♀ 1 unc. 4—6 lin.)

Ph. Bo. cœruleocephala. *Linné*.—*Don*. iii. pl. 100.—*Ep. cœruleocephala*. *Steph. Catal.* No. 5957.

Griseous: anterior wings ashy-grey, with an oblique black line at the base, then an undulated transverse black streak, followed behind the middle by another, very much waved, and somewhat parallel with the hinder margin, bordered externally towards the costa with whitish; between these are two kidney-shaped confluent stigmata with whitish edges and a double greyish white centre; on the hinder margin is a cinereous fascia, bounded externally by a narrow indented black line; on the anal angle is an abbreviated black streak; the cilia griseous spotted with brown: posterior wings whitish, with a black streak at the anal angle, and the nervures and a central spot dusky: thorax anteriorly griseous, posteriorly cinereous: abdomen dusky-griseous, with the apex brownish. Female rather darker.

Caterpillar stout, smooth, and bluish, with yellow longitudinal lines and black spots: it appears early in the spring, feeds on the blackthorn, whitethorn, pear, &c., and changes to pupa in the beginning of June, within a strong silken web.

A very common species, appearing towards the beginning or middle of September: the larvæ are very abundant towards the end of May, in hedges, near Coombe, Peckham, and Colney-hatch woods.

GENUS XXXVII—CERURA, *Schrank*.

Palpi four; *labial* small, three-jointed, compressed, with the apex obtuse; *maxillary* minute, attenuated at the tip; *maxillæ* short, flat, not spiral. *Antennæ* curved at the apex, bipectinated in both sexes, the pectinations longest in the males, and ciliated: *head* moderate: *thorax* rather stout, not crested: *abdomen* moderate, robust in the females, with the apex obtuse, slightly tufted in the males: *wings* entire, somewhat diaphanous, *anterior* elongate; *neuration* various: *legs* and abdomen beneath woolly: *anterior tibiæ* with an elongate, compressed lobe; posterior simple. *Larva* robust, truncate anteriorly, with an elevation on the third segment; the anal feet produced into two long retractile filaments, with two short spines between: *pupa* inclosed in a hard case, generally formed of pieces of woody matter united by gluten.

As a genus *Cerura* is well marked, and may be at once known by its pallid, subdiaphanous, strongly-veined wings, deeply bipectinated, somewhat uncinnated antennæ, and robust pilose body and legs, exclusively of the distinctions in the trophi, which can only be observed by dissection: the species have been greatly neglected in this country; but having, for several years past, attended particularly to them, I have detected several nondescripts, one of which has, however, been lately published. The species may be very readily detected by the differences in the neuration of the wings, a

character which has been held to be so constant in the order Lepidoptera, as to distinguish the *families*; consequently, when applied as a test to discriminate *species*, its importance must be vastly superior.

A. Posterior wings with the three anterior nervures simple at the apex, the fourth trifold.

Sp. 1. bicuspis? PLATE 13. f. 3.—*Alis niveis, anticis basi margineque posticè nigro punctatis, fasciâ transversâ utrinque subsinuatâ cinereâ, thoracè antice albo.* (Exp. alar. ♂ 1 unc. 2—5 lin.: ♀ 1 unc. 4—6 lin.)

Bo. bicuspis. *Borkhausen?*—Co. bicuspis. *Steph. Catal. No. 5958.*

Anterior wings snow-white at the base, with one basal and five transverse black spots; then a broad cinereous fascia, thickly sprinkled with orange, margined anteriorly with black and orange, and terminating irregularly with a waved border posteriorly; between the fascia and the apex is a broad whitish space, with three or four transverse undulated dusky strigæ, and a central black spot; the terminal striga is bent inwardly towards the tip of the wing, and is bordered externally towards the costa with an oblique abbreviated cinereous fascia, with orange spots; the hinder margin is pure white, with a row of black spots: posterior snow-white, with a central spot and the nervures fuscous; the margin spotted with black, and an obscure dusky-transverse fascia: thorax anteriorly white, posteriorly bluish-black, with transverse orange fasciæ.

Caterpillar luteous-red, with three large brownish-red spots on the sides; beneath greenish: feeds on willow.

Rare in England: it has been taken occasionally at Darentwood, in July. "Near Dublin, not very uncommon."—*Rev. J. Bulwer*, who kindly supplied me with a fine series.

Sp. 2. integra. PLATE 15. f. 3.—*Alis albidis, anticis basi margineque posticè nigro punctatis, fasciâ transversâ utrinque nigro marginata cinerea, thorace cinereo, fasciis transversis nigris.* (Exp. alar. 1 unc. 7 lin.)

Ce. integra. *Steph. Catal. No. 5959.*

Allied to the preceding, but larger: anterior wings white, with a black spot at the base, then a transverse row of four black spots, followed by a broad uniform cinereous fascia, deeply margined on both sides with black and orange, and thickly sprinkled with the latter colour within; this band is followed by a whitish space, having two minute black spots on the costa, with an abbreviated line between, resembling the letter *T*, and continued by an irregular waved streak; in the centre is also another minute black dot: the hinder margin of the wing is pale cinereous, bordered anteriorly by a flexuous black striga, and a deep abbreviated costal fascia: on the posterior margin is a row of small black spots: posterior wings whitish, with an elongate central spot, an obsolete fascia, the nervures and marginal dots dusky: thorax cinereous, with three transverse black fasciæ, the central one interrupted.

A comparison of the accompanying figures will readily exhibit the difference between the preceding insect and this, which in the integrity of the central fascia closely resembles the *Ce. bicuspis* of Fischer, but its colouring is somewhat dissimilar. If it be Fischer's insect, the larva, according to him, is green, with a triangular violaceous dorsal spot, margined with yellowish, on the two first joints, and a dorsal series of triangular red spots, margined with yellow, the spots becoming wider towards the tail, on the other joints:—it feeds on the birch.

I believe my specimen was taken at Coombe-wood, as I obtained it from a practical collector, who chiefly collected in that locality.

B. Posterior wings with the second nervure bifid, the fourth trifid.

a. Anterior wings with a central transverse fascia.

Sp. 3. *furcula*. *Alis griseis, anticis basi margineque postico nigro punctatis, fasciâ transversâ subangustâ luteo-fuscâ, extus flexuosâ, thorace variegato, antice griseo.* (Exp. alar. ♂ 1 unc. 2—4 lin.: ♀ 1 unc. 3—6 lin.)

Ph. Bo. *furcula*. *Linné.—Don. viii. pl. 272?—Ce. furcula. Steph. Catal. No. 5960.*

Anterior wings griseous; the base rather whitish, with black spots, as in *Ce. bicuspis*; followed, as in that insect, by a somewhat similar, though rather broader, cinereous fascia; beyond which is a dusky-ash patch, containing a black costal and central spot, a dusky lunule pointing inwards towards the centre of the fascia, two dusky undulated strigæ, and finally a more distinct blackish striga, with an abbreviated costal band; the hinder margin cinereous, with a row of black dots: posterior wings griseous, with a central spot, the nervures and an obscure band brownish; the margin with a row of black spots: thorax variegated with black and orange, with the front griseous.

This and the two following are distinguished by the slight bifurcation of the second nervure of the posterior wing, and by their inferior size.

Caterpillar green, with a patch over the head, and posterior appendages rufous; a broad streak of the same colour on the back, margined with whitish; and an interrupted lateral line:—it feeds on various species of willow, aspen, and poplar: pupa brown.

Apparently the most frequent of the smaller *Ceruræ* near London: at Coombe and Darent's woods in July, Hertford, Ripley, &c. "Epping-forest."—*A. Cooper, Esq.* "York, scarce."—*W. C. Hewitson, Esq.* "Coleshill."—*Rev. W. T. Bree.*

Sp. 4. *arcuata*. *Alis griseis, anticis basi margineque postico nigro punctatis, fasciâ transversâ angustâ cinereâ nigro marginatâ, strigâque posticâ flexuosâ arcuorum nigrorum, thorace antice cinereo.* (Exp. alar. 1 unc. 5 lin.)

Ce. arcuata mihi. Steph. Catal. No. 5961.

Wings dusky-ash; anterior with the base rather white, and spotted, as in *Ce. furcula*; then a narrow transverse cinereous fascia, deeply bordered with black

on both sides, with an angular excision on the outer edge; the rest of the wing is of an uniform colour, with a central black dot, close behind which is a transverse undulated dusky striga, and a little beyond another flexuous one, composed of black lunules pointing outwards, and terminated at the apex by an abbreviated cinereous fascia; the hinder margin with a row of small black spots: posterior wings cinereous, with a central dot, and minute marginal spots dusky, the nervures fuscous: thorax anteriorly cinereous.

Distinguished by the posterior undulated striga of arched lines, and the integrity of the external margin of the fascia on the anterior wings.

It seems closely allied to *Ce. forficula* of Zetter, the larva of which is pale green, with the back bluish, the sides with a white sulcus spotted with red: and feeds upon willows.

My specimen of this species (which is the only one I have examined) was taken at Coombe-wood several years back.

Sp. 5. *latifascia*. *Alis albidis, anticis basi margineque postico nigro punctatis, fasciâ transversâ latâ cinereo-fuscâ nigro marginatâ, thorace cæruleo-atro luteo fasciato, anticè cinereo.* (Exp. alar. 1 unc. 7—8 lin.)

Ce. latifascia. *Curtis*, iv. pl. 193.—*Steph. Catal. No. 5962*.

Wings whitish; anterior with one basal and five transverse large black spots, the latter followed by a broad cinereous fascia, variegated with orange and margined with black, the inner margin extending nearly to the anal angle, the outer sinuated; beyond this is a whitish space with three undulated, indented, black strigæ, some spots of the same colour on the costa, and one near the centre resembling the letter x, the outer striga with an abbreviated cinereous costal band, sprinkled with orange, hinder margin whitish, with a terminal row of black dots: posterior wings with a lunate dusky spot, and two obsolete fuscous bands, the inner one narrowest, nervures dusky; margin spotted with black: head and thorax anteriorly cinereous, the latter bluish-black, with two faint orange bands posteriorly.

I have one female of this insect, which was captured near London, and a male that I obtained from Mr. Marsham's cabinet. "Near Linton, north Devon."—*Curtis*, l. c.

Sp. 6. *fuscina*. *PLATE 15. f. 1.—Alis albidis, anticis basi margineque postico nigro punctatis, fasciâ transversâ cinereâ extus repandâ, collari griseo.* (Exp. alar. ♂ 1 unc. 8 lin.: ♀ 1 unc. 8—10 lin.)

Bo. fuscina. *Hübner?*—*Ce. fuscina*. *Steph. Catal. No. 5963*.

Hoary white; anterior wings with one basal and five transverse black spots, followed by a narrow transverse cinereous band, sprinkled with orange, narrowly margined anteriorly with black and orange, and rather sinuated posteriorly, with an abbreviated straight black margin towards the costa, beyond this, on a whitish ground, are two rather indistinct undulated fuscous strigæ, and a few obsolete spots, with an oblique abbreviated cinereous fascia near the apex of the costa, the hinder margin with a row of black spots: posterior



wings whitish, with a central lunulated spot, and some dots on the margin fuscous: thorax griseous in front, posteriorly variegated with black and orange. Caterpillar of a fine emerald-green, with the head brown, the back blue, and the retractile filaments red: it feeds on birch and oak.

Taken occasionally in July at Darent-wood, and other places near London, but rare. “On Epping-forest.”—*Mr. Stone*.

Sp. 7. *bifida*. PLATE 15. f. 2.—*Alis albidis, anticis basi margineque postico nigro punctatis, fuscâ transversâ cinerâ nigro marginatâ, posticis fimbriâ fuscâ, thorace griseo, nigro flavoque transversim striato.* (Exp. alar. 1 unc. 8 lin.: ♀ 1 unc. 10—11 lin.)

Ph. *bifida*. *Brahm.*—Ce. *bifida*. *Steph. Catal. No. 5964.*

Larger than the last, of which it may eventually prove to be a variety: wings whitish, the anterior spotted with black at the base, with a broad cinereous fascia, sprinkled with orange, and margined with black, the outer undulated; beyond this, on a pale cinereous ground, are several undulated dusky or black strigæ, and some obscure black spots and marks, one more conspicuous resembling the letter x; the hinder margin is dull hoary, or ashy-white, with an abbreviated costal cinereous fascia, sprinkled with yellow, and a row of black spots on the margin itself: posterior wings whitish, with a central lunular spot and a broad marginal fimbria of a dusky hue; the margin with a row of minute black dots: thorax griseous, transversely striated with black and pale orange.

This and the last species have the bifurcation of the nervure on the posterior wings very considerable.

Found near London; one of my specimens I obtained from Mr. Francillon's collection. “Darent-wood, and near Limehouse.”—*Mr. Stone*.

b. *Anterior wings without a central fascia, but marked throughout with dentated fuscous or dark strigæ.*

Sp. 8. *vinula*. *Alis anticis albis, punctis strigisque fuscis repandis dentatisque, corpore albo nigro maculato.* (Exp. alar. ♂ 2 unc. 6—9 lin.: ♀ 3 unc. 1—4 lin.)

Ph. Bo. *vinula*. *Linné.—Don. iii. pl. 85.—Ce. vinula.* *Steph. Catal. No. 5965.*

Anterior wings white, cinereous in the female; the nervures flavescent; the costa spotted with black; the base with two or three spots, then two undulated rows of transverse approximating black dots, followed by a narrow waved fuscous fascia, and another duplex corresponding series of paler dots; towards the middle is an arcuated black streak, pointing outwards, anterior to which on the costa is an abbreviated dusky fascia, continued in an undulated line to the inner margin: behind the central lunule are two very acutely waved or dentate transverse strigæ, and on the hinder margin a series of longitudinal dusky streaks: posterior wings white, or dusky-ash in the female, with a discoidal lunular spot; the margin more or less spotted with dusky or black: thorax

cinereous, obsoletely spotted with black; abdomen whitish, spotted with black. Female larger, deep cinereous, with the posterior margins much spotted with brown.

Var. β . Bo. Minax. *Hübner*?—Of a deeper cinereous, with the abdomen black, narrowly annulated with whitish, the thorax scarcely spotted.

Var. γ . The thorax pale cinereous, with several very large black spots; the anterior wings with a very distinct transverse dusky fascia near the base, the undulated strigæ towards the apex very strong, and each exterior areolet with a broad longitudinal wedge-shaped brownish streak.

Caterpillar at first black, with two short, rigid, appendages on the anterior segment; these disappear on the third moult, when the colour becomes green, with one or two red spots; and on the final moult, the upper surface becomes bright green, the lower dusky-green, the humeral tubercle, and three spots on the sides, bright red: it feeds on the willow, poplar, and sallow: is found towards the end of summer: the pupa is enclosed in a very hard folliculus, composed of wood-dust and gluten.

Far from uncommon in many parts of the country, especially in marshy districts, during the latter end of May; it also appears in some seasons a second time in August. “Near Amesbury, plentifully.”—*Rev. G. T. Rudd*. “Rarely near York, and Newcastle-on-Tyne.”—*W. C. Hewitson, Esq.* “Not uncommon in Cambridgeshire.”—*Rev. L. Jenyns*.

Sp. 9. *erminea*. *Alis niveis, anticis punctis strigisque fuscis dentatis, thorace niveo nigro maculato, abdomine nigro punctato.* (Exp. alar. ♂ 2 unc. 3—6 lin.: ♀ 3 unc.)

Bo. *erminea*. *Hübner*.—Ce. *erminea*. *Steph. Catal. No. 5966.*

Wings white, or whitish, anterior with several distinct black spots at the base, followed by an irregular duplex undulated transverse striga, then two abbreviated streaks, the second arising from a costal spot, afterwards a lunate discoidal spot, also arising from a costal spot; behind the lunule are three strongly dentate undulated transverse dusky strigæ, with a row of fuscous spots; the hinder margin has also a row of somewhat cuneated black dots: the posterior wings white in both sexes, with a discoidal lunule, and a marginal row of black dots: the thorax is white, spotted with black, and the abdomen is pale, with the base and apex immaculate, the intermediate part with large black transverse spots.

Caterpillar deep red, or reddish-brown, sprinkled on the back with white, with a white lateral line: head large, with two black spots on the angles: when young, nearly black: it feeds on the willow, poplar, and aspen: pupa pale brown.

This fine species has been taken at Birch-wood, and I believe in other places near London.

GENUS XXXVIII.—STAUROPUS, *German.*

Palpi short, clothed with elongate scales, straight, cylindric, biarticulate, the terminal joint acute: *maxillæ* obsolete. *Antennæ* porrect, simple at the apex; of the male strongly bipectinated, from the base nearly to the tip; of the female simple throughout: *head* very small: *eyes* large: *thorax* not very stout, nor crested: *abdomen* somewhat elongate, rather attenuated towards the apex, which is furnished in both sexes with a tuft of fine woolly hair: *wings* entire, thickly clothed with scales, with several elevated tufts of scales and down; *anterior* lanceolate-ovate; *posterior* ovate-triangular: *legs* rather short, thickly clothed with down: *anterior tibiæ* in both sexes with an elongate attenuated spine or lobe; *posterior* with spines at the apex only. *Larva* naked, the back with several acute protuberances, the caudal segments laterally expanded and reflexed, with the hinder prolegs converted into two styliform processes: *pupa* folliculated.

Stauropus differs from the other genera of this family by having several patches of elevated scales on the anterior wings, which are rather densely clothed with scales, and somewhat pilose; the body is very downy beneath, and both sexes have a soft tuft at the apex of the abdomen, which is slightly elongate: the male has the tip, and the female the whole, of the antennæ simple.

Sp. 1. Fagi. *Alis rufescente-cinereis, anticis fasciis duabus linearibus luteis flexuosis, serieque punctorum nigrorum.* (Exp. alar. ♂ 2 unc. 4—6 lin.: ♀ 2 unc. 6—8 lin.)

Ph. Bo. Fagi. *Linné.*—*Don.* xii. pl. 328.—*St. Fagi.* *Steph. Catal. No. 5967.*

Cinereous: anterior wings deep ashy-gray, tinged with reddish, especially towards the inner margin; the base hoary, with a rugose black spot at the shoulder; followed by a narrow flexuous lutescent striga, and a second beyond the middle very much waved and indented; the space between deep dusky-ash; midway between the posterior striga and the hinder margin, near the costa, is a lunular yellowish spot, bounded exteriorly with black, and nearly parallel with the hinder margin is a slightly waved row of elevated blackish spots: posterior wings deep cinereous, with the base paler, and an undulated whitish indented and abbreviated striga on the anterior margin; the posterior margin with a continuous series of whitish lunular marks: the cilia of all the wings cinereous, varied with hoary: back with a dusky streak down the middle.

Caterpillar pale rusty-brown, with the fifth, sixth, and seventh dorsal segments bearing a conical protuberance, the anal segments laterally expanded and depressed, the terminal one furnished at its apex with two styliform processes in lieu of legs; the six anterior legs elongated: it feeds on the beech, oak, hazel, birch, lime, alder, and sloe; and is found in the autumn: while at rest its anterior legs hang down, and its head and tail are elevated, the latter being frequently reflected on the back: pupa dark glossy brown, enclosed in an irregular closely woven smooth web of a very peculiar texture.

Mouffet has admirably delineated the larva of this rare insect, and informs us that in his days it was very common in Norfolk, in England; but now both larva and imago are but rarely met with; the insect is, however, widely dispersed, and one or more specimens are taken nearly annually at Birch-wood, and in the neighbourhood: the male is less frequently observed than the female. From the singular aspect of the larva, Albin termed it the Lobster caterpillar, a name which has since been applied to the imago. "In a wood near Cheshunt."—*Mr. Hatchett*. "New Forest, Hants, near Brockenhurst, in July, 1821."—*Rev. W. Kirby*. "Near Norwich, once."—*W. C. Hewitson, Esq.* "Larva near Tunbridge Wells, in Sept. 1827."—*W. Raddon, Esq.* "Bexley-wood."—*Mr. Samouelle*.

GENUS XXXIX.—NOTODONTA, *Ochsenheimer*.

Palpi short, very hairy, biarticulate; basal joint minute, terminal compressed, truncate: *maxillæ* short. *Antennæ* filiform, bipectinated in the males, the pectinations short, and nearly vanishing at the apex; in the females, slightly denticulated interiorly, and ciliated: *head* and *eyes* small; *thorax* not crested: *abdomen* somewhat elongated, robust, subcylindric; the apex downy: *wings*, *anterior* obtuse at the apex, with the hinder margin rounded and denticulated; the interior, or dorsal, edge, with a projecting tuft of scales in the centre: *legs* short, robust, densely clothed with scales and hair; *the anterior tibiæ* anteriorly with an elongate lobate appendage; *anterior tarsi* short, stout, clothed with elongate scaly hair. *Larva* naked; with two or more conical protuberances on the back, the anal segment reflected, and bearing two imperfect prolegs: *pupa* subterranean, folliculated.

The genus Notodonta, as above restricted, may be known from the cognate genera by having the anterior wings somewhat rounded at the apex, and very slightly denticulated; the thorax not crested, the antennæ bipectinated in the males alone, and the abdomen slightly elongated. The larvæ have several conical protuberances on the back, and the hinder prolegs spurious; the pupæ are subterranean and folliculated.

Sp. 1. Dromedarius. *Alis anticis fusco-rufescenti nebulosis, liturâ baseos anique flavescentibus, strigisque duabus dentatis albidis.* (Exp. alar. ♂ 1 unc. 4—8 lin.: ♀ 1 unc. 8—11 lin.)

Ph. Bo. Dromedarius. *Linné*.—*Don. x. pl. 350. f. 1.* No. Dromedarius. *Steph. Catal. No. 5968.*

Anterior wings reddish-brown, with an irregular yellowish patch at the base; an undulated or dentate pale transverse striga before the middle, edged externally with chestnut, and another flexuous and strongly denticulated one

behind the middle, terminating in a yellowish streak at the anal angle; between these, on the disc, is a lunate dark spot, edged with yellowish; and on the hinder margin is a slightly waved bright chestnut brown irregular fascia, bounded externally with whitish or yellowish; cilia fuscous: posterior wings dusky-brown, with an obscure whitish fascia; the cilia dusky, rather whitish towards the outer edge: thorax dusky, with its centre rufescent: abdomen brownish-gray: antennæ ferruginous.

Var. β . *Steph. Catal.* l. c. With the colour more vivid, the basal spot and the strigæ on the anterior wings more distinct, and of a brighter hue; the posterior wings whitish, with a paler fascia.

This species varies considerably both in the markings and the intensity of its colouring, as well as in magnitude.

Caterpillar found in September; it is green, with four dorsal eminences and a reflexed tail: it feeds on the alder, beech, hazel, and poplar.

Taken occasionally at Coombe and Darenth woods, and at Norwood, the beginning of June, and in August. "Alderley, Cheshire."—*Rev. C. Stanley*.

Sp. 2. *perfusca*. PLATE 14. f. 2.—*Alis anticis fusco-nebulosis, liturâ baseos anique flavescentibus, strigisque duabus denticulatis obsoletis*. (Exp. alar. ♂ 1 unc. 6—8 lin.: ♀ 1 unc. 8—10 lin.)

Bo. *perfuscus*? *Haworth*.—No. *perfusca*. *Steph. Catal.* No. 5969.

Similar to the last, but of a totally different hue, and like its congener, extremely variable in the intensity and brilliancy of its markings; anterior wings fuscous, mixed with chestnut, with darker clouds, and an irregular yellowish patch at the base, a slightly undulated striga before, and a flexuous and deeply indented one behind, the middle, terminating at the costa and near the anal angle, in a yellowish streak; between the strigæ is a fuscous streak, edged with yellowish; and the hinder margin has a slightly-waved row of reddish or chestnut spots: cilia fuscous: posterior wings fuscous, with a light, rather flexuous oblique striga arising from the anal angle: abdomen fuscous: thorax dusky, sometimes rufescent in the middle.

Whether this insect be truly a distinct species from the preceding, I will not undertake to determine; but, from the circumstance of all the specimens of this (above thirty) which I have seen being of the peculiar dusky hue above described, and all of No. *Dromedarius* (of which I have seen at least two hundred specimens) being strongly rufescent, it appears probable.

"Found near Dublin."—*Rev. J. Bulwer* and *N. A. Vigors, Esq.*; to whom I am indebted for the specimens contained in my collection. It has not, that I am aware of, occurred in England.

Sp. 3. *ziczac*. *Alis anticis brunneis spadiceo-undatis fasciatisque, strigâ lunari ferrugineâ, posticis albidis, fasciâ liturâque anali obsoletâ*. (Exp. alar. ♂ 1 unc. 8—9 lin.: ♀ 1 unc. 10—11 lin.)

Ph. Bo. *ziczac*. *Linné*.—*Don.* iv. pl. 119.—No. *ziczac*. *Steph. Catal.* No. 5970

Anterior wings of the male with the base pale chestnut-brown, with two abbreviated strigæ on the costa, the centre of which, adjoining the second striga, is occupied by a large subquadrate whitish patch, followed posteriorly by a larger ocelliform one, tinged with purplish, intersected by black dashes on the nervures, margined anteriorly by a deep brown lunule, and posteriorly with griseous clouds and a whitish streak; the hinder margin with a narrow black line, and the interior margin streaked with black: cilia brown, faintly dotted with white on the edge: posterior wings ash-coloured, with a central lunular dusky spot, and a narrow marginal line; cilia whitish, towards the anal angle clouded with deep brownish-black. Female with the anterior wings of a more uniform castaneous tinge, and the posterior mouse-coloured, with brown cilia.

Caterpillar with two acute protuberances on its back, and one on the anal segment: it is greenish or ash-coloured, with a paler lateral stripe and reddish tail: it feeds on the poplar and willow, and is found in June, August, and September: the imago appears the beginning of May, and in July.

Not very abundant near London: I have occasionally taken it at Darenth and Coombe woods; and, in June 1827, I captured two specimens at Ripley. "Near Dublin."—*N. A. Vigors, Esq.* "Coombe-wood."—*Mr. Ingpen.* "Rather frequent near Holt, Norfolk."—*A. H. Haworth, Esq.* "Coleshill."—*Rev. W. T. Bree.* "Near York, rarely."—*W. G. Hewitson, Esq.*

GENUS XL.—LEIOCAMPA * *miki*.

Palpi extremely minute, enveloped in dense hair: *maxillæ* obsolete. *Antennæ* filiform, bipectinated in both sexes to the apex; the pectinations shorter, but not vanishing at the tip, and abbreviated in the female: *head* hairy in front: *eyes* moderate: *thorax* not crested: *abdomen* elongate, cylindric, tufted at the apex: *anterior wings* elongate, rather acute at the apex, the posterior margin slightly rounded and obsoletely denticulated; the interior with a single squamous tooth towards the centre: *legs* short, not very stout; *femora* and *tibiæ* densely clothed with hair; *tarsi* slender: *anterior tibiæ* with a very short spine-like process interiorly. *Larva* naked, with a small conical protuberance on the anal segment only: *caudal legs* perfect: *pupa* subterranean, folliculated.

Leiocampa differs from *Notodonta* by the slenderness and comparative acuteness of its anterior wings, and by both sexes having the antennæ bipectinated: the thorax is not crested, the anterior wings very slightly denticulated, with one dorsal prominence, the abdomen elongated, the legs densely clothed with hair, and the

* *Λισος λαυς, χαμψη ορυα.*

palpi very minute. The larvæ are smooth on the back, and change to pupæ in a folliculus composed of pieces of wood united by silk.

Sp. 1. dictæa. *Alis anticis exustis, marginibus fuscis plagâque mediâ albidâ; posticis albis, liturâ anali fuscâ.* (Exp. alar. ♂ 2 unc.: ♀ 2 unc. 3—4 lin.)

Ph. Bo. dictæa. Linné.—Ph. trepida. Don. vii. pl. 239. f. 1.—Lei. dictæa. Steph. Catal. No. 5971.

Head and thorax brown-gray, mixed with white; abdomen rusty-gray: anterior wings grayish-white, the costa clouded with fuscous, with two or three abbreviated oblique black dashes towards the apex; the interior margin broadly black, with an irregular broken whitish streak interiorly, and intersected towards the anal angle by a few grayish dashes; the posterior margin with a grayish streak, followed by an interrupted blackish one: posterior wings white, with a dusky patch at the anal angle, intersected by a grayish streak.

Caterpillar reddish-brown, green on the sides and glossed with violet above, with a black dorsal streak: it feeds on poplar, willow, and birch, and is found in July and September: the imago occurs in the beginning of August and June.

Not common; taken at Coombe and Darent woods, and near Dover. “Epping.”—Mr. H. Doubleday. “Near York, on willows, rarely.”—W. C. Hewitson, Esq.

Sp. dictæoides. *Alis anticis exustis, plagâ albâ maculâque anguli interioris triangulari albâ, posticis fuscescentibus, liturâ anali fuscâ.* (Exp. alar. ♂ 2 unc.: ♀ 2 unc. 2—4 lin.)

Bo. dictæoides. Esper.—Lei. dictæoides. Steph. Catal. No. 5972.

Head and thorax brown-gray, varied with white, the centre of the latter reddish, with a transverse dusky-brown streak anteriorly, and two longitudinal ones on the back; abdomen ashy-gray: anterior wings whitish-gray, with several oblique abbreviated deep black patches towards the apex of the costa, the inner edge broadly umbre, with a broad black streak, slightly edged with white, at the base, towards the middle, and bearing an elongate, triangular, broad white patch at the hinder angle; the hinder margin also of an umbre tinge, with a whitish streak margined with black, the latter intersected by white; cilia umbre, whitish at the edges: posterior wings dirty-white or dusky in the male, whitish in the female, with a broad dusky patch at the anal angle.

Caterpillar light-green, with a yellow lateral stripe, and a line on the anal protuberance: it is found on the poplar, willow, and birch.

Not so common as the last, but found in the same woods rather later in the season.

GENUS XLI.—LOPHOPTERYX * *mili*.

Palpi short, hairy, slightly ascending, biarticulate, the first joint elongate, curved at the base, the terminal one short, ovate: *maxillæ* short, a little spiral. *Antennæ* short, filiform, simple and ciliated in the females, very slightly bipectinated in the males, nearly vanishing towards the apex: *head* small; *eyes* moderate: *thorax* crested: *abdomen* not elongate, rather stout; apex of the male with a trifid scaly tuft: *wings* compressed when at rest; *anterior* subtriangular, the hinder margin rounded, and rather deeply denticulated; the interior with a single, elongate, squamous tooth towards the centre: *legs* rather slender, downy; the apex of the *tibiæ* with two elongate spurs; the *anterior* internally simple. *Larva* slightly hairy, with one or two conical protuberances on the anal segment alone; hinder prolegs perfect: *pupa* folliculated.

In this genus I have included such insects of this family as have the thorax crested, the anterior wings considerably denticulated on the hinder margin, with one prominence on the inner, the antennæ short, and very slightly bipectinated in the males alone; the abdomen scarcely elongate, with a trifid scaly tuft at the apex: the larvæ slightly hairy, with one or two conical eminences on the anal segment alone.

Sp. 1. *camelina*. *Alis anticis ferrugineis fasciâ obscuriore denticuloque dorsali reflexo, posticis ochraceis, maculâ anali fuscâ.* (Exp. alar. ♂ 1 unc. 6—8 lin. ♀ 1 unc. 8—10 lin.)

Ph. Bo. *camelina*. *Linné.—Don. vi. 7. pl. 183.—Lo. camelina. Steph. Catal. No. 5973.*

Antennæ ferruginous: *thorax* the same, with a yellowish patch behind: *abdomen* ochraceous, with the sides and apex reddish: *anterior wings* ferruginous, with a very delicate nearly obsolete undulated black streak at the base, another before the middle, and a third rudimentary one towards the hinder margin on the costa; behind this are a few costal spots, and an obsolete pale striga: *cilia* and dorsal denticulations tipped with blackish: *posterior wings* ochraceous, with the nervures and margin rufescent, and a bluish-brown patch at the anal angle.

The intensity of the colours varies considerably: in some individuals there is a deep brown flexuous streak from the dorsal denticulation to the costa, and the black strigæ are more distinctly shown: in others the ferruginous tinge predominates.

Caterpillar delicate bluish-green, with paler longitudinal lines; the *stigmata* purplish: the legs and two caudal protuberances bright crimson. It feeds on

* Λοφός: crista, πτερυγία ala.

the oak, birch, willow, poplar, alder, beech, lime, &c. and appears towards the middle of May and the end of September; the imago about the end of April and the beginning of August.

A common and beautiful species, found in most woods throughout the metropolitan district. "Near Newcastle-on-Tyne, rarely."—*W. C. Hewitson, Esq.* "Alderley, Cheshire."—*Rev. E. Stanley.*

Sp. 2. *cuculla*. *Alis anticis ochraceis ferrugineo maculatis striatisque, fasciâ marginali cinereo-albidâ, posticis cinereis liturâ anali ferrugineâ.* (Exp. alar. ♂ 1 unc. 5—6 lin.: ♀ 1 unc. 6—10 lin.)

Bo. *cuculla*. *Borkhausen.*—Ph. Bo. *cuculla*. *Don. x. pl. 333. f. 1.*—Lo. *cuculla*. *Steph. Catal. No. 5974.*

Antennæ pale ferruginous: head, thorax, and abdomen ochraceous: the crest ferruginous posteriorly: anterior wings, with the costa from the base, beyond the middle, broadly ochraceous-yellow, the interior margin and apex ferruginous, with irregular dark markings; the costa with two or three abbreviated brownish streaks in the centre, and the posterior margin with an ashy-white patch, divided by a rusty blotch intersected by a black line, and varied by a few dusky shades: cilia pale, with ochraceous spots: posterior wings griseous, with a rusty blotch at the anal angle.

Caterpillar slightly hairy, with the dorsal segments obsoletely elevated, the anal one with a distinct conical protuberance, pale bluish-green, with a brownish patch on the back of the third and fourth segments; the prolegs and caudal elevations crimson: it feeds on maple, and is found in the autumn.

This rare insect I once caught at Darenth-wood, by mothing, in June, 1820: several other specimens have been captured at the same place, and in the neighbouring woods. "Near Erith."—*Mr. Hatchett.*

† Sp. 3. *carmelita*. PLATE I4. f. 3. *Alis rubiginosis, anticis ad marginem internam canescentibus, maculis duabus albis costalibus, posticis fasciâ obsoletâ albidâ liturâque anali cærulescente.* (Exp. alar. 1 unc. 7 lin.)

Bo. *carmelita*. *Esper.*—Lo. *carmelita*. *Steph. Catal. No. 5975.*

Antennæ ochraceous-red: head and thorax pale rusty-red; the latter with a yellowish lateral spot: the abdomen ochraceous-red: anterior wings, with the costal edge fine pale red, minutely irrorated with hoary: the inner margin, especially towards the anal angle, hoary, with a few black specks, and minute white irrorations; the costa with an obsolete white spot before the middle, and a larger subconical one towards the apex, from which springs a row of small dusky-brown spots, which reach to the dorsal denticulation: cilia brown at the base, white at the tip: posterior wings rufescent, with an obsolete whitish fascia, and a bluish-brown patch at the anal angle.

Caterpillar green, with a yellowish dorsal line, and a rufescent lateral one: it feeds on the birch.

Two indigenous specimens only have come beneath my observation, one of which is in the British Museum, the other in Mr. Vigors' collection: they were found in the larva state, at Darenth-wood, about sixteen years back; and, I believe, made their appearance in the perfect state in the beginning of March.

GENUS XLII.—PTILODONTIS, *Hubner*.

Palpi considerably elongated, porrect, ascending, clothed with elongate scales: *maxillæ* short. *Antennæ* filiform, bipectinated in both sexes, the pectinations shortest in the females: *head* minute: *eyes* small: *thorax* slightly crested: *abdomen* elongated, tufted at the apex, the tuft bifid in the male: *anterior wings* denticulated at the hinder margin, the interior edge with two recurved tufts of elongate scales, the basal one the largest; *posterior* entire: *legs* moderate, downy; *tibiæ* with spurs at the apex. *Larva* naked, smooth, without any dorsal prominences, head very acute: *pupa* subterranean, foli-culated.

The genus *Ptilodontis* contains only a single European species, and is at once discriminated by the elongate projecting palpi, crested thorax, denticulated anterior wings, which have two prominences on the interior margin, elongated and bifid tufted abdomen, and bipectinated antennæ in both sexes. The larva is destitute of any dorsal or caudal eminences, and has a very acute head.

Sp. 1. *palpina*. *Alis anticis griseo-albidis nigro nervosis striatisque*. (Exp. alar. ♂ 1 unc. 6—10 lin.: ♀ 1 unc. 10 lin.—2 unc. 2 lin.)

ph. Bo. *palpina*. *Linné*.—Pt. *palpina*. *Steph. Catal. No. 5976*.

Pale griseous or ochraceous: antennæ white, with the pectinations brown: anterior wings grayish-white, irregularly streaked with dusky-black, with the nervures black; before the middle is a transverse irregularly angulated streak, and behind the middle a second flexuous one frequently geminated, or accompanied by a row of black spots: and on the posterior margin is also a similar, but obsolete, row, the spots being placed separately between the nervures: the dorsal prominence margined with ochraceous-brown: posterior wings cinereous: cilia of all ochraceous, sometimes speckled with dusky or brown.

This species varies considerably in colour and size.

Caterpillar slender, green, with four pale dorsal lines, and a yellow lateral one sprinkled with orange, the former dotted with black: it feeds on the willow, poplar, and lime, and occurs at the end of May and September: pupa reddish-brown: the imago is found at the beginning of June, and at the end of August.

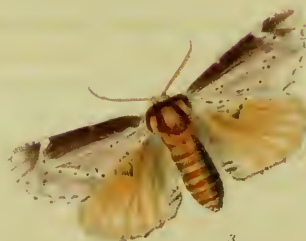
Not very abundant; taken occasionally at Coombe, Birch, and Darenth woods; also at Hertford, and in other places in the metropolitan district. “Near Epping.”—*Mr. H. Doubleday*.



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GENUS XLIII.—PTILOPHORA * *miki*.

Palpi minute, enveloped in dense elongated hairs: *maxillæ* very short. *Antennæ* slender, of the males furnished with extremely long plumose radii, of the females subserrated; *head* densely pilose, small: *eyes* moderate: *thorax* not crested, pilose: *abdomen* scarcely elongated, clothed with velvety pile, and slightly tufted in the male: *wings* subdiaphanous, pilose; *anterior* with the apex entire, the inner margin obsoletely denticulated; *posterior* entire: *legs* short, robust, downy: *tibiæ* with minute spurs at the apex. *Larva* without dorsal protuberances: *pupa* subterranean, folliculated.

This remarkable genus may be known with facility by the peculiar delicate transparent texture of its pilose wings, which are scarcely denticulate in the interior margin, by its pilose body and minute concealed palpi; the males are further distinguished by having the antennæ furnished with extremely long plumose radii.

Sp. 1. variegata. PLATE 14. f. 1.—*Alis ochraceo-ferrugineis, strigâ arcuatâ flavescente*. (Exp. alar. ♂ 1 unc. 4—6 lin.: ♀ 1 unc. 6—8 lin.)

Ph. Bo. variegata. Villars.—Pt. variegata. Steph. Catal. No. 5977.

Head, thorax, and abdomen ochraceous-red: antennæ with fuscous radii: anterior wings ferruginous ochre, or ferruginous varied with ochraceous, with a distinct arcuated yellowish striga behind the middle, the nervures dusky, and the anterior margin and cilia of a deep rusty-brown; the inner edge densely margined with elongate hairs: posterior wings pale ferruginous or gray-brown, sometimes with a very obsolete transverse paler fascia.

Caterpillar smooth yellowish-green, with a bluish dorsal line, and three delicate whitish lateral lines: it feeds on the maple, birch, and willow, and is found at the end of May: the pupa is reddish-brown: the imago appears towards the end of October.

Far from common; but met with nearly annually in the larva state at Darent-wood, which is the only locality that I am acquainted with, though it probably inhabits other parts. Old specimens are in the collection at the British Museum, and in those of Messrs. Vigers, Haworth, and Swainson.

GENUS XLIV.—CHAONIA *miki*.

Palpi very minute, slightly porrect, recurved at the base, pilose: *maxillæ* extremely short. *Antennæ* bipectinated in the males to the apex, in the females subserrated and ciliated: *head* small, pilose, with a distinct fascicle of hairs at the base of each antenna: *eyes* moderate: *thorax* slightly crested: *abdomen*

* Πτερον πenna mollis, φερω φερο.

not elongated, clothed with short down: *wings* opaque, squamous: *anterior* entire at the apex, with an obsolete denticulation on the inner edge; *posterior* entire: *legs* short, downy: *tibiæ* with spurs at the apex, *anterior* with a compressed spine. *Larva* naked, without dorsal protuberances; anal legs perfect: *pupa* subterranean, folliculated.

Chaonia has the anterior wings entire, with a very obsolete prominence on the interior margin; the thorax very slightly crested, the abdomen not elongated, the antennæ bipectinated to the apex in the males, and subserrated in the females. The larva has no dorsal eminences.

Sp. 1. Roboris. *Alis anticis cinereis, strigis duabus undatis albis, lunulâque mediâ nigrâ.* (Exp. alar. ♂ 1 unc. 4—7 lin.: ♀ 1 unc. 8 lin.)

No. Roboris. *Fabricius.*—*Don.* ix. pl. 299.—Ch. Roboris. *Steph. Catal.* No. 5978.

Antennæ reddish-yellow: head and collar whitish-gray: thorax ashy: abdomen rusty-gray: anterior wings cinereous, with two undulated white strigæ, and a central broad white fascia, in which is a black lunule; towards the hinder margin is an obsolete flexuous whitish striga, and the nervures are dusky: cilia gray, interrupted by dusky: posterior wings cinerascens, with two paler transverse fasciæ, and a dusky central lunule and nervures: cilia dusky, with whitish spots externally. Female rather darker.

Caterpillar green or brown, with two yellowish dorsal lines, and a paler lateral one: it feeds on the oak, and is found in the middle of September: the imago in June.

A scarce species; taken at Birch, Darent, Coombe, and Colney-hatch woods.—“In Mr. Kirby’s garden at Barham.”—*Mr. Sparshall.*

Sp. 2. Dodonea. *Alis anticis obscure griseis fasciâ albâ, strigis duabus undatis albis, maculâque apicis nigrâ tripartitâ.* (Exp. alar. ♂ 1 unc. 4—6 lin.: ♀ 1 unc. 6—8 lin.)

Bo. Dodonea. *Wien. Verz.*—Ch. Dodonea. *Steph. Catal.* No. 5979.—Ph. trimacula. *Don.* x. pl. 352. f. 2.

Antennæ pale-yellowish: head and thorax whitish-gray, the latter dusky-brown behind; abdomen ochraceous-yellow: anterior wings obscure grayish-ash, varied with fuscous at the base, with an obsolete arcuated whitish striga margined with fuscous; in the centre is a broad whitish fascia, with a faint dusky line, followed by an ashy-gray patch, which reaches to the hinder margin, and has a somewhat triangular dusky blotch on the costa; cilia white, spotted with fuscous: posterior wings grayish-ash, with a paler oblique streak.

Var. *ℓ.* *Steph. Catal.* l. c. With the base, and a central fascia on the anterior wings, whitish, the latter with an undated fuscous striga; the rest of the wing dusky-brown, faintly varied with grayish.

The intensity of the colour, and apparent disposition of the markings, varies considerably, scarcely two specimens occurring precisely similar; sometimes the entire insect (except the abdomen) is suffused with dusky, at others it is nearly white.

Caterpillar green, with a bright orange-yellow lateral line, slightly dotted with red: it feeds on the oak in September, and the imago is produced in June.

Considerably more abundant than the foregoing, though far from common: I have repeatedly taken the larva at Birch-wood; and the insect likewise occurs at Coombe and Darenth woods. "Littleton copse."—*Rev. G. T. Rudd.*

GENUS XLV.—PETASIA * *mih.*

Palpi short, compressed, straight, very hairy, biarticulate, the terminal joint ovate, subacute: *maxillæ* nearly obsolete. *Antennæ* elongated, bipectinated to the apex in the males, subserrated and ciliated in the females: *head* moderate, hairy, with two fascicles of elongate scales at the base of each antenna: *thorax* not crested; *abdomen* slightly elongated, scarcely tufted at the apex: *anterior wings* elongate, entire, with a patch of elongate scales in the middle of the interior edge: *posterior* subovate: *breast* and *femora* very downy; *anterior tibiæ* with a compressed lobe internally, and an acute, bent, glossy spine exteriorly; the *posterior tibiæ* with spurs at the apex. *Larva* naked, fleshy, with the anal segment gibbous: *pupa* subterranean.

I have designated this genus from the habits of the larvæ, which (in common with those of the two following genera) assume, while at rest, the attitude of those of the Sphingidæ, and, in addition,

† Sp. 3. *Querneæ*. *Alis griseo-cinereis, fasciis tribus undatis albis nigro marginatis, lunulique mediâ albâ, posticis albis.* (Exp. alar. 1 unc. 6—8 lin.)

Bo. *Querneæ*. *Fabricius*.—Ch. *Querneæ*. *Steph. Catal. No. 5980.*

Antennæ ferruginous: body griseous: anterior wings griseous-ash, with three waved white strigæ margined with black, with a central white lunule before the posterior striga: posterior wings whitish.

Caterpillar gibbous behind, green, with four yellow lines and dusky spiracles: it feeds on the oak.

Of the Bo. *Querneæ*, *Fabricius*, I have not seen an indigenous specimen; the insect described by that name in *Lepidoptera Britannica* being evidently a variety of Ch. *Dodonea* alone, as it does not possess the essential characteristics of the white central lunule, and the two undulated white fasciæ on the anterior wings, and the white posterior wings, which are peculiar to Bo. *Querneæ*.

* Πιτταω, *pando*.

stretch out their anterior legs to the utmost, whence the name *sprawler*, which has been applied to the insect. The present genus may be known in its imago state by the integrity of its anterior wings, which are somewhat pilose, and destitute of any real prominence on the interior margin, by the elongation of its antennæ, which are bipectinated in the males alone, and by the acute, bent, glossy spine on the exterior margin of the anterior tibiæ.

Sp. 1. Cassinea. *Alis griseis, anticis lineolis sparsis atris, posticis margine fusco punctato.* (Exp. alar. ♂ 1 unc. 6—9 lin.: ♀ 1 unc. 8—10 lin.)

Bo. Cassinea. *Fabricius. Don. xii. pl. 397. f. 2.*—Pe. Cassinea. *Steph. Catal. No. 5981.*

Antennæ griseous: head cinereous, with the crown black; thorax cinereous anteriorly, with four dusky lines, and a whitish patch on each side: anterior wings deep cinereous, varied with gray, with a conspicuous streak at the base, and a second on the interior margin; the rest of the wing, especially towards the hinder margin, with smaller, irregularly-scattered, black streaks, and a faint pale interrupted striga, frequently obsolete at the hinder margin: posterior wings somewhat cinereous, with a central dusky spot, and nervures: abdomen griseous.

Caterpillar bright green, with a paler dorsal line, and two yellow lines on each side, united posteriorly, the upper one forming an acute angle on the caudal segment: it feeds on the lime, sawow, oak, beech, privet, &c.: pupa brown: the imago appears at the end of October.

Rare in the imago state, but sufficiently common in the larva, though difficult to rear: I have repeatedly taken the latter in plenty at Coombe and Darenth woods, and occasionally near Hertford. In the New Forest, Hants, the insect is evidently more abundant than near London. "Taken near Coventry, by Mr. Mercer."—*Rev. W. T. Bree.*

GENUS XLVI.—PERIDEA * *mihi*.

Palpi very short, hairy, triarticulate, the basal and terminal joints minute: *maxillæ* short. *Antennæ* elongate, serrated, bipectinated nearly to the apex in the males: *head* small, pilose: *thorax* slightly crested, robust, hairy: *abdomen* scarcely elongated, rather stout, slightly tufted at the apex: *thorax* and *body* beneath very downy: *legs* short, stout, densely clothed with hair and down to the middle of the tarsi; *anterior tibiæ* with a spineiform lobe on the inner margin: *wings* entire, subdiaphanous; *anterior* lanceolate-ovate, with a single prominence on the inner margin. *Larva* naked, without dorsal protuberances,

* *Isopidens, meticulosus.*

the back slightly rugose, the sides obliquely streaked: *pupa* folliculated, the folliculus placed on the surface of the ground.

Peridea has considerable affinity in the final state to Stauropus, and in the primary to Petasia and Endromis; but, as shown in the note appended to the genus Lasiocampa, it cannot be inserted in its true situation in a *linear* series: it has subdiaphanous and elongate wings, with the hinder margin entire, and one dorsal prominence; by which characters, united with the serrated antennæ, and robustness of the legs, it may be known from the rest of the family. The larva and imago, when touched, tremble as if in fear, and the pupa is not buried beneath the surface of the ground.

Sp. 1. serrata. *Alis anticis griseis, strigis maculis lunulâque mediâ fuscis, posticis pallidis, margine anteriori cinereo.* (Exp. alar. ♂ 2 unc. 2—3 lin.: ♀ 2 unc. 3—7 lin.)

Bo. serrata. Thunberg.—Pe. serrata. Steph. Catal. No. 5982.—Ph. tritopha. Don. x. pl. 359.

Griseous; the anterior wings with two obsolete abbreviated dusky strigæ at the base, the basal one darkest, and the other before the middle; the space between darker than the rest of the wings, and margined on the inner edge with the dorsal prominence, which is black: the hinder part of the wing is cinerous, and has a fuscous or obsoletely-rufescent lunule, edged with griseous, near the middle, followed by a faint undulated striga, then two lineolæ towards the apex, and an irregular row of dull ferruginous spots towards the hinder margin; the latter has a row of dusky lunules, and the cilia are brownish, immaculate: posterior wings yellowish-white, with the anterior margin clouded with cinereous: abdomen brownish.

Caterpillar light-green, with two whitish dorsal lines and red and yellow oblique lateral stripes; legs red: it feeds on the oak, and is found in the autumn: the imago appears at the end of June.

Having employed the term Peridea to this genus as expressive of the habits of the larva and imago, which appear to be rather generic than specific, I have been compelled to drop the older names of Fabricius and the Wiener Verzeichnis as being synonymous, and adopt the one used by Thunberg.

Not common: I once took a fine pair on a stunted oak in Richmond-park: and I have seen it captured both in Coombe and Darenth woods: it likewise occurs at Birch-wood.

GENUS XLVII.—ENDROMIS, *Ochsenheimer*.

Palpi very short, hairy, compressed, recurved, obtuse: *maxillæ* obsolete. *Antennæ* filiform, closely bipectinated in both sexes, the bipectinations shortest in the female, and in both sexes incurved, and terminating rather abruptly at the apex: *head*, *thorax*, and *abdomen* thickly clothed with very fine, long hairs,
HAUSTELLATA. VOL. II. 1ST NOVEMBER, 1828. D

which also envelope the base of the wings: *wings* broad, subtriangular, entire, somewhat diaphanous, pilose, without a dorsal prominence: *cilia* extremely short: *legs* slender; *hinder tibiæ* with a minute pair of spurs at the apex only. *Larva* naked, attenuated in front, with a pyramidal elevation at the anal segment, and oblique lateral stripes: *pupa* folliculated, not subterranean.

This beautiful genus was first characterized by Ochsenheimer, in the fourth volume of his *Schmetterlinge*; and shortly afterwards Dr. Leach discriminated it as a genus, by the name *Dorvillia*, in the *Edinburgh Encyclopædia*, without characters, or being aware of Ochsenheimer's labours, his work not having reached this country at the time. It differs from all the foregoing by having the antennæ bipectinated in both sexes, the bipectinations being convoluted and scarcely diminishing at the apex of the antennæ, by the brevity of the cilia, which are scarcely perceptible, by the width and transparency of its wings, and by its densely-pilose thorax and abdomen.

Sp. 1. *versicolora*. *Alis griseis, anticis strigis duabus lunulæque nigris albo innatis, maculisque tribus ad apicem thoraceque anticæ albis.* (Exp. alar. ♂ 2 unc. 4—6 lin.: ♀ 2 unc. 10 lin.—3 unc. 6 lin.)

Ph. Bo. *versicolora*. *Linné*.—*Entom. Trans. (Neale)*, i. 323. pl. 8. ♂, ♀ *larvæ*.—*En. versicolora*. *Steph. Catal. No.* 5983.

Antennæ black: male with the thorax anteriorly white, posteriorly fulvous, mixed with whitish: abdomen fulvous, with a black patch on the second segment: anterior wings with a white fascicle of hairs at the base; griseous, with two dusky-black strigæ, the first before the middle bent outwardly, and edged with white inwardly, the second behind the middle, flexuous and biangulated towards the inner margin, and bordered externally with white: between them is a black lunule, pointing outwards; the hinder portion of the wing is deep griseous, with three oblique, subdiaphanous, triangular, united white spots at the apex, and each nervure on the hinder margin with a dilated wedge-formed whitish streak: posterior wings tawny-orange, with an undulated dusky striga, and central lunule, and a dusky patch on the anterior margin, bordered posteriorly with white: female larger griseous-white, with the thorax and anterior wings nearly as in the male, but paler: abdomen whitish, with the second segment dusky.

Caterpillar green, minutely speckled with black below, with oblique lateral yellow streaks, a yellow line on the three anterior segments, and on the tail, and yellow anterior legs: it feeds on the birch, alder, hazel, beech, and lime, and appears in June: pupa brown, with a spine at the apex: imago appears in April.

For several successive years I found the larvæ of this beautiful insect at Darent-wood, and succeeded in tracing their progress to perfection, but lost many from being unable to devote sufficient

attention thereto. I have also seen the insect three or four times in April, at Coombe-wood, flying, in the afternoon: it is, however, uncommon, but very widely dispersed. "Taken near Plymouth."—*Dr. Leach*. "Near Ipswich, in April last."—*Rev. W. Kirby*. "On Ashdown-forest, Sussex, rather abundantly in the larva state, about ten years since."—*Mr. Stone*.

FAMILY III.—BOMBYCIDÆ.

Palpi usually very small, and nearly concealed, mostly triarticulate: *maxillæ* generally wanting, or extremely short, not spiral. *Antennæ* rather short, bipectinated, in the males especially, or serrated in the females; the bipectinations rarely diverging, but mostly approximating towards each other anteriorly: *thorax* not crested; *body* stout, generally tufted at the apex, particularly in some females: *wings* horizontal, or deflexed, frequently reversed. Males smaller than the females. *Larva* naked, with a verrucose ring on each segment, bearing several diverging whirls of hair; or pilose, with distinct fascicles of hair on the sides: *pupa* with the segments simple, rarely subterranean, enclosed in a folliculus, which is frequently of a firm and rigid texture.

The prevailing characteristic of the Bombycidæ is their want of maxillæ, or having mere rudiments thereof, and consequently useless to the animal: the palpi are wanting, or generally remarkably small in comparison to the magnitude of the insects, which are amongst the largest of the Linnean Phalænæ. Their habits are highly interesting, and one of the most curious is the assembling of the males of most of the species by a virgin female. The males, in general, fly swiftly in the day-time, from about noon to four or five o'clock in the day, and again in the evening; but the females are usually very sluggish and inactive. The larvæ are frequently gregarious, and are invariably furnished with sixteen legs, and in the conterminous genera alone have one or more dorsal tubercular points or elevations; they are usually pilose, and in some of the genera their hair has the property of creating much irritation and pain when applied to the skin: the pupa is rarely subterranean, but is enclosed in a folliculus, which is very commonly of a firm consistence. From the habits of the Bombycidæ being so greatly diversified, it becomes necessary to divide them into several genera, although, from the paucity of characters in the order Lepidoptera, the distinctions between them appear but trifling; nevertheless, if distinguishing names, whether capriciously termed genera or subgenera, are to be given to animals having dissimilar habits and

structure (and such seems to be the received opinion by the best writers), the following must necessarily be required to include all the indigenous species, and may be known by *external* characters, as below: their prevalent tints are griseous or fawn-colour.

Alæ posticæ	integræ; omnes	ocellatæ: <i>Antennarum articulus singulus</i>	uniramosus vel unidentatus: . 48. AGLIA.
		inocellatæ: <i>anticæ</i>	biramosus vel bidentatus: . 49. SATURNIA.
	plus minusve denticulatæ: Palpi	subdiaphanæ, elongatæ, maculâ centrali	nullâ: . 52. PÆCilocampa.
		opacæ, sub-abbreviatæ, posticæ	albâ: . 53. Eriogaster.
		rotundatæ: <i>Cauda</i>	vix hirsuta: . 50. Lasiocampa.
		subtruncatæ, subcutatæ: .	valdè hirsuta: .
		sub-breves . . .	Antennæ
		elongatæ: Alæ anticæ	rectæ: . 51. Trichiura.
			sub-articulatæ: . 54. Cnethocampa.
			55. Clisiocampa.
			56. Eutricha.
			57. Odonestis.
			58. Gastropacha.

GENUS XLIX.—SATURNIA, *Schrank*.

Palpi and *maxillæ* obsolete, their place occupied by a dense tuft of hair. *Antennæ* subcylindric, very short; of the male bipectinated, the pectinations divergent, and diminishing in length to the apex of the antennæ, each joint of which bears two ramifications internally and externally; female with each joint bidentate: *head* small, scarcely visible from above: *thorax* stout, densely pilose; *abdomen* abbreviated in the males; rather elongate and stout in the females, pilose, slightly tufted at the apex: *wings* broad, horizontally expanded during repose, entire, rounded, posterior ones simple: *cilia* very short. *Larvæ* naked, with a coloured ring on each segment, adorned with several whirls of hair, placed upon distinct warts: *pupa* enclosed in a rigid pyriform folliculus.

The broad, horizontally extended, subdiaphanous wings of *Saturnia*, which have the cilia so short as to be scarcely perceptible, well distinguish the genus from the rest of this family: and from *Aglia*, which resembles it in the first particular, the biramose articulations of the antennæ and want of palpi separate it.

GENUS XLVIII.—AGLIA, *Ochsenheimer*.

Palpi distinct, rather short, clothed with scales, compressed, triarticulate, terminal joint short, ovate: *maxillæ* obsolete. *Antennæ* short; of the male bipectinated, each joint bearing a single pectination, the latter diminishing in length towards the apex of the antennæ; female with each joint unidentate, not pectinated: *head* moderate: *thorax* rather short, pilose: *abdomen* moderate,

Sp. 1. Pavonia. *Alis griseo cinereoque nebulosis fasciatisque, ocello nictitante subfenestrato.* (Exp. alar. ♂ 2 unc. 6—10 lin.: ♀ 2 unc. 6. lin.—3 unc. 6 lin.)

Ph. At. Pavonia. *Linné.*—*Harris, pl. 25. f. b. g. d.*—*Sa. Pavonia Steph. Catal. No. 5985.*

Antennæ cinereous: male with the thorax and abdomen fulvous, the former white anteriorly: anterior wings griseous, irrorated with whitish, with three strigæ, the first oblique, abbreviated, purplish, edged with black; the second behind the middle considerably waved and purplish, edged with black; the last on the hinder margin whitish, the margin itself dusky: between the two anterior strigæ is an elongate whitish patch, in which is a large nictitating ocellus, having a black pupil, with a white lunule, or griseous iris, encircled with black, and bearing a bluish lunule towards the base of the wing: the apex of the wing is purplish, with one or two black, white, and rufous spots: posterior wings tawny-ferruginous, slightly clouded with griseous, with a central nictitating ocellus, as in the anterior, a griseous posterior fascia, and a dusky or purplish hinder margin. Female larger and paler, thorax brown posteriorly: abdomen fuscous, with the margins of the segments whitish.

Both sexes vary considerably, especially the females: in some specimens of the latter all the wings are beautifully suffused with purplish; in others, the margin and strigæ of the anterior wings alone are purplish, and some are nearly destitute of the purplish hue: the bulk also varies.

pilose, tufted at the apex: *wings* entire, broad, horizontally expanded; posterior simple: *cilia* moderate. *Larva* naked, fleshy, the back subnodose: *pupa* slightly hairy, folliculated.

† Sp. 1. Tau. *Alis testaceis, ocello subviolaceo pupillâ hastatâ albâ.* (Exp. alar. ♂ 2 unc. 10 lin.: ♀ 3 unc. 3 lin.)

Ph. At. Tau. *Linné.*—*Martyn.*—*Ag. Tau. Steph. Catal. No. 5984.*

Testaceous: wings above with a slightly arcuated dusky line near the posterior margin, with a large discoidal subviolaceous ocellus on each, having a white mark, resembling the letter *T*, for a pupil: beneath paler, or yellowish: anterior with an ocellus as above, a faint dusky streak towards the hinder margin, and a pale spot at the apex on the costa; posterior pale testaceous, with a trifid central white spot on an oblique deep broad streak, with a whitish line on the hinder margin, and another parallel with it, between it and the central blotch. Female similar, but of a paler colour, and larger.

Caterpillar green, with oblique lateral white streaks: when young it bears five elongate rufous dorsal appendages: it feeds on birch, lime, hazel, oak, willow, beech, alder, and fruit trees: the pupa is brown: the male flies by day (in May).

“The place of this fine species in *Lepidoptera Britannica* rests solely on the authority of Martyn, in his *Aurelian's Vade Mecum.*”—*Haworth, I. B. 79.* It has not occurred in Britain, to my knowledge, subsequently to the appearance of the above note in 1802.

Caterpillar gregarious, and black when young, afterwards green, annulated with black, with verticillated hairy red and yellow warts on the black band: it is found on heath (*Erica vulgaris*), blackthorn, alder, oak, bramble, rose, elder, willow, birch, strawberry, fruit-trees, whortleberry (*Vaccinium Myrtillus*), &c. during the autumn, and constructs a hard pyriform cocoon, covered with a fuscous down, in which they change to pupæ, which emerge in April, though sometimes they remain two seasons in that state: the pupa is brown, and very obtuse.

Common in several places near London; in the hollow of Coombe-wood; at Hertford, Ripley, &c. "Not unfrequent in Horningsea and Swaffham fens."—*Rev. L. Jenyns*. "On heath, near Netley, Salop, very common."—*Rev. F. W. Hope*. "Common in Plaistow-marshes in August last."—*A. Cooper, Esq.* "Abundant on heaths, near Scarborough."—*Mr. Williamson*. "Near Manchester, but apparently rare till recently, when numbers of males were captured by taking the opposite sex into the fields."—*T. Marshall, Esq.*

GENUS L.—LASIOCAMPA*, *Schrank*.

Pulpi minute, short, porrected, very hairy, triarticulate; basal joints of equal length; terminal joint minute, ovate: *maxille* obsolete. *Antennæ* straight, deeply bipectinated in the males to the apex, serrated in the females: *head* small: *thorax* robust: *abdomen* moderate, tufted, somewhat cleft at the apex, in the males; robust, and scarcely tufted, in the females: *wings* entire, rounded, deflexed, and slightly reversed during repose: *cilia* distinct. *Larva* cylindrical and hairy, curls up when disturbed: *pupa* obtuse, enclosed in an egg-shaped cocoon of firm consistence; or an elongate dense folliculus.

The texture, integrity, and comparative elongation of the wings

* The vastness of entomological science renders it replete with difficulties, when the attempt is made to reduce *every* species to its proper genus, by reason of the almost innumerable genera that appear requisite: and the present family fully exemplifies the above position, if the groups termed genera are to consist of objects having *similar* habits and structures, as, unless all those here proposed be adopted, it is manifest that species of *dissimilar* habits, &c. must be improperly associated together; though, in extensive genera, the conterminous species frequently differ considerably from the types. Again, *Lasiocampa* and the cognate genera conspicuously illustrate the *absolute impossibility* of placing natural objects in a *linear* series of affinity, while they tend to show the *circular disposition* which appears to prevail throughout nature, as I have endeavoured to represent by a diagram in my Catalogue, which clearly exhibits the *utter impracticability* of placing *every* subject in its proper situation by the ordinary *linear* method of communication, and the *facility* with which they may be arranged *circularly*, as nearly every group hitherto treated of in these volumes may be disposed.

of *Lasiocampa*, combined with the strongly bipectinated antennæ of the males, and scarcely pilose tibiæ, well distinguish that sex from the rest of the Bombycidæ; and the females are known by having the abdomen very robust, scarcely tufted, the antennæ straight, the legs slender and scarcely pilose; the wings entire, and not sub-diaphanous.

Sp. 1. Rubi. *Alis cervinis immaculatis, anticis strigis duabus albidis.* (Exp. alar. ♂ 2 unc. 4—6 lin.: ♀ 2 unc. 6—8 lin.)

Ph. Bo. Rubi. *Linné.*—*Don.* iii. pl. 87.—*La. Rubi.* *Steph. Catal. No.* 5986.

Male entirely of a lively reddish-fawn colour above; the anterior wings, with the posterior margin, rather darkest, with two nearly parallel oblique whitish streaks. Female pale ashy-brown; in other respects similar to the male, excepting the slender antennæ.

Var. β. The anterior wings with one (the hinder) posterior striga above.

Var. γ. The anterior wings with the two strigæ united, and forming a broad whitish band.

The position of the strigæ varies considerably.

Caterpillar velvety black, with pale yellow rings, when young; afterwards black below, ferruginous above, with black rings: it feeds on the bramble, appearing in September, living throughout the winter, and changing in the spring to a dusky pupa, annulated with luteous, in an elongate silken folliculus: the imago is produced towards the end of May, or beginning of June.

The habit of this species somewhat removes it from the genus: which is also apparent from the structure of its folliculus, which closely resembles that formed by the larva of *Gastropacha*.

Not uncommon in woody plains and extensive heaths throughout the metropolitan district, and in other parts; at Shooter's-hill, Hertford, Wimbledon-common, &c. I have frequently taken it. "Near Matlock."—*Rev. F. W. Hope.* "Epping."—*Mr. H. Doubleday.* "In profusion on the heaths near Stockton, in Yorkshire."—*L. Rudd, Esq.*

Sp. 2. Trifolii. *Alis in utroque sexu griseo-ferrugineis, anticis puncto albo lineâque repandâ lividâ, posticis immaculatis.* (Exp. alar. ♂ 2—4 lin.: ♀ 2 unc. 4—6 lin.)

Ph. Bo. Trifolii. *Fabricius.*—*Linn. Trans. (Lewin)* iii. pl. 2. f. 1—4.—*La. Trifolii.* *Steph. Catal. No.* 5987.

The radii of the antennæ, head, thorax, abdomen, and wings of a rusty-griseous, paler in the female: anterior wings darkest at the base, with a whitish or cream-coloured discoidal spot, and a livid or ochraceous slightly flexuous line towards the hinder margin: posterior immaculate: shaft of the antennæ ochraceous.

Caterpillar pale fuscous or ochraceous, with the incisures spotted with blue, and

a red collar: it feeds on the Purple Trefoil (*Trifolium pratense*), Yellow Medick (*Medicago falcata*), and Plantain: it appears early in the summer, and spins a loose web, in which it changes to a yellowish-brown pupa, in a hard reddish-yellow folliculus; the imago is found in July and August.

Rare near London: it was formerly taken in tolerable plenty by the late Mr. Lewin, in some chalky fields, near Darenth-wood, though of late years it has not occurred in that neighbourhood; but the modern specimens have been found in the New-forest, Hants, where the insect appears to be not very uncommon.

Sp. 3. *Medicaginis*. *Alis luteo-cinereis, anticis puncto albo fasciisque duabus albidis, posticis strigâ oblitteratâ albidâ.* (Exp. alar. ♂ 2 unc. 2—4 lin.: ♀ 2 unc. 4—7 lin.)

Bo. *Medicaginis*. *Borkhausen*.—La. *Medicaginis*. *Curtis*, iv. pl. 181.—*Steph. Catal. No. 5988.*

Antennæ pale ochraceous, with a yellowish shaft: head, thorax, abdomen, and wings dull rusty-chestnut, paler in the female: anterior wings with a central white spot, and two whitish or ochraceous fasciæ, the first abbreviated and sinuated near the base, the other beyond the middle, a little flexuous and obscurely denticulated on the interior edge, the hinder margin of the wing pale castaneous: posterior wings rather darkest at the base, with an obscure whitish bent striga passing through the middle.

Caterpillar ochraceous-yellow, with the incisures blackish-blue, and oblique white streaks on the sides: it feeds on various kinds of Medick (*Medicago*), in June, and in July changes to a brownish pupa, with a greenish abdomen, in a brown folliculus: the moth appears in August.

Whether this (or rather whether the indigenous specimens which are presumed to be synonymous with the La. *Medicaginis*, Ochs.) be truly distinct from the preceding, I am not, from experience, prepared to affirm; but my friend, Mr. Ingpen, decidedly bred a single example from a number of larvæ obtained in July, 1827, from near Brockenhurst, which *did not* differ in the *slightest degree* from each other. Further observations are therefore requisite before we arrive at the truth.

I obtained a pair of this species from the collection of the late Mr. Francillon; and there are several specimens in the British Museum, which were captured near Bristol: others are in the cabinets of Messrs. Stone and Ingpen, from the New-forest; those in the former collection were found in the larva state near Lyndhurst, in company with La. *Trifolii*.

Sp. 4. *Quercus*. *Alis maris saturatè brunneis, fæminæ luteo-brunneis, fasciâ internè arcuatâ flavâ pone medium, anticis puncto medio albo, liturâque flavâ ad basin.* (Exp. alar. ♂ 2 unc. 6—10 lin.: ♀ 3 unc. 1—3 lin.)

Ph. Bo. *Quercus*. *Linné*.—La. *Quercus*. *Steph. Catal. No. 5989.*

Male with the radii of the antennæ, thorax, abdomen, and wings very deep chestnut-brown; the latter with a broad yellow fascia, arcuated and margined abruptly interiorly, rather shaded off towards the hinder margin, which has a broad chestnut-brown fimbria: the anterior wings have a central white spot, usually triangular, and a conspicuous yellow patch (as particularly mentioned by Linné) at the base: the anterior wings have brown cilia, the posterior yellowish mixed with brown. Female larger, similarly marked, but much paler, being in general of a luteous colour, with the hinder margins of all the wings palest. Both sexes vary considerably in colour.

Caterpillar ochraceous, with black rings, and oblique white streaks on the sides: it feeds on the ash, birch, sloe, willow, oak, hornbeam, whitethorn, and broom, and is found in June and July: cocoon dusky: imago appears in August.

Rare near London; but very abundant in the New-forest and in Devonshire, &c. "Common near Barnstaple."—*W. Raddon, Esq.* "Near Dublin, not unfrequent."—*N. A. Vigors, Esq.*

Sp. 5. *Roboris?* *Alis maris brunneis, fæminæ luteis, fasciâ subarcuatâ pone medium, anticis puncto-subrotundato albo.* (Exp. alar. ♂ 2 unc. 6—10 lin.: ♀ 2 unc. 10 lin.—3 unc. 4 lin.)

La. *Roboris?* *Schränk.*—Ph. Bo. *Quercus.* *Don.* iv. pl. 104. f. 1. ♂ f. 2 ♀?—*Steph. Catal. No. 5990.*

Similar to the last, but paler: the anterior wings without the yellow patch at the base; the central white spot generally rounded, the yellow fascia more dilated, and straighter internally; the hinder margin of the posterior wings with a very narrow brown fimbria; the cilia immaculate yellow or luteous. Female luteous, as in the last, but stouter, with comparatively broader and rounder wings and straighter yellowish fasciæ. This insect also varies much in colour.

Caterpillar luteous, with black rings, an interrupted row of white spots on the back, and oblique white and luteous streaks on the sides: cocoon luteous.

Are this and the preceding insect truly distinct? they certainly differ considerably in their larva, and also in their intermediate and final states; and from the circumstance of the present insect abounding so greatly in the vicinity

† Sp. 6. *Dumeti.* *Alis fuscescentibus anticis puncto, fasciâ margineque postico luteis.* (Exp. alar. 2 unc. 6—10 lin.)

Ph. Bo. *Dumeti.* *Linné.*—*Turton (!)*—La. ? *Dumeti.* *Steph. Catal. No. 5991.*

Antennæ yellowish: head and thorax luteous, abdomen dusky: wings fuscous, with a luteous anteriorly repanded fascia and posterior luteous margin: the anterior with a subtrigonal luteous spot before the fascia.

Caterpillar brown, with yellow dots and black transverse spots: it feeds on lettuce, dandelion, &c.: changes to a subterranean pupa. Said by Stewart to inhabit Britain; but I suspect without sufficient authority. It probably belongs to another genus, as its habit appears somewhat different from the true *Lasiocampæ*.

of the metropolis, while the true *Ph. Quercus* of Linné is but rarely found within that district, although it abounds in the New-forest, in Devonshire, and near Dublin, I am induced to consider them at least as distinct as *La. Medicaginis* is from *La. Trifolii*.

Common in the neighbourhood of London; especially at Darentwood, near Hertford and Ripley; also near Dover, Hastings, and Brighton. “Epping.”—*Mr. H. Doubleday*. “Not uncommon in Cambridgeshire.”—*Rev. L. Jenyns*.

GENUS LI.—TRICHIURA * *michi*.

Palpi very minute, concealed by elongate hairs, triarticulate; basal joint as long as the second, and stouter; terminal joint minute, ovate: *maxillæ* obsolete. *Antennæ* straight, short, bipectinated in the males, serrated in the females: *head* moderate, densely pilose, distinctly visible from above: *thorax* stout, pilose: *abdomen* slender, with an elongate sub-bifid tuft at the apex in the males, very robust in the females, with a dense woolly mass at the tip: *wings* rounded at the apex, not reversed during repose, abbreviated in both sexes: *legs* short, stout, densely clothed with elongate hairs to the claws. *Larva* cylindrical, hairy, solitary: *pupa* stout, enclosed in an ovate rigid cocoon.

If the term genus be employed, as it ought, in the sense alluded to in p. 38, doubtless other characters, besides *mere outline* must be sought for to discriminate the genera of Lepidoptera; that *Trichiura* offers other distinguishing marks by which it may be divided from *Clisiocampa*, is very readily shown, and that its habits are totally dissimilar has been known more than a century. The female *Trichiura* lays her eggs in irregular longitudinal stripes on the bark of trees, covering them with down from the apex of her abdomen. *Clisiocampa*, on the contrary, deposits them in a solid compact ring, round a slender twig, without any protection: the larvæ of *Trichiura*, when hatched, very speedily separate, and do not form a general nest; whereas those of *Clisiocampa* form a general web, which they increase in bulk until it becomes nearly as large as a man's head, and do not separate till they have undergone their final moult, previously to their change to pupæ; in fact, they are so truly gregarious, that the young larvæ almost invariably die if separated from their companions: again, when the larvæ of *Trichiura*† change to pupæ,

* *Θρίξ villus, ουρα cauda.*

† This and the following genera, as well as most of the new genera of *Lep. Pomeridiana*, employed in this work, were proposed by me upwards of ten years

they form a hard oval egg-like cocoon, not a subfusiform double silken web, suffused with a loose powder, as formed by those of *Clisiocampa*; the imago differs from that of the genus last named by having the antennæ straight, serrated in the females; the wings rounded, obtuse, and abbreviated in both sexes; the legs stout, and very pilose; the abdomen strongly tufted in both sexes, and of the female furnished at its extremity with a downy mass; the head distinct and very hairy, and the proportions of the palpi different.

Sp. 1. *Cratægi. Alis cinereis, strigis duabus, aut fasciâ obscuriore fuscis.* (Exp. alar. ♂ 1 unc. 1—3 lin.: ♀ 1 unc. 2—5 lin.)

Ph. Bo. *Cratægi. Linné.—Don. iv. pl. 117.—Tr. Cratægi. Steph. Catal. No. 5992.*

Antennæ fuscous: thorax and abdomen ashy-gray: anterior wings cinereous, with an incurved striga before the middle, arising from the base of the wing, and reaching to the costa, near which it makes an acute angle, and behind the middle another, very much angulated, dusky-black; between these the colour is usually darker, with generally an obsolete dusky central spot; the hinder margin is cinereous, with a row of minute fuscous spots on the margin, and frequently an undulated dusky striga: posterior wings brownish, with an oblique darker bar. Female darker, fuscous: the anterior wings with two undulated strigæ, obscurely edged with whitish; posterior immaculate.

Both sexes vary considerably in size and colour; the male has the strigæ on the anterior wings sometimes nearly obliterated: and the female has frequently several whitish transverse waved or angulated strigæ.

Caterpillar black, with luteous hairs and white fasciæ, and a few rusty spots; the sides with an interrupted streak of whitish spots: it feeds on whitethorn, sloe, and willow: changes to a dusky-brown pupa in June, and the imago appears in September.

Not common, though not unfrequently met with near Darent, Bireh, and Coombe woods. “Epping.”—*Mr. H. Doubleday.*

GENUS LII.—PÆCILOCAMPA* *mih.*

Palpi extremely minute, subglobose, enveloped in slender elongate hairs: *maxillæ* obsolete. *Antennæ* densely bipectinated in the males, the pectinations scarcely decreasing towards the apex, strongly serrated in the females: *head* very small

since, and the collection of insects at the Exeter Institution arranged in conformity therewith in 1821, although several of them have been recently published from a transcript of my original catalogue *under other names*. A comparison between the genera of Ochseneimer, Latreille, Germar, &c. with those herein given, will readily show how far I have been anticipated, and my divisions adopted.

* *Πασιδης*; varius: *χαμπη* *cruca*.

and hairy: *thorax* stout and hairy: *abdomen* abbreviated, tufted in the male, and pilose laterally in both sexes, the female without a downy mass at the apex: *wings* entire, elongate, acute, subdiaphanous, not reversed during repose: *legs* with the *femora* and *tibiæ* pilose. *Larva* slightly hairy, a little depressed, maculated, not gregarious: *pupa* short, obtuse, enclosed in a silken folliculus, superficially subterranean.

The same principles which authorize the disunion of the insects comprised in the genus *Lasiocampa* of Schrank, or the separation of *Trichiura* from *Clisiocampa*, justify the establishment of this genus, as it differs from *Eriogaster* in habit and structure, as much as *Clisiocampa* does from *Lasiocampa*; the males have their antennæ more densely pectinated and stouter than in *Eriogaster*, and the females are destitute of the woolly apex to their abdomen; thus also differing from those of *Cnethocampa*, which, with the following genus, resembles them in the texture of their wings. *Larva* solitary: *pupa* obtuse: eggs naked.

Sp. 1. *Populi*. *Fusca, thorace anticè pallidâ, alis fusciscentibus, strigâ sesquialterâ repandâ albâ, anticis basi pallidè brunneis.* (Exp. alar. ♂ 1 unc. 3—5 lin.: ♀ 1 unc. 2—8 lin.)

Ph. Bo. *Populi*. *Linné.*—*Don.* ix. pl. 307. ♀.—Pœ. *Populi*. *Steph. Catal.* No. 5993.

Thorax dusky or black, anteriorly pale griseous, or castaneous: anterior wings fusciscent, with the base, and a slender dash on the inner margin, castaneous-brown; an incurved pale striga near the base, not reaching to the inner margin, and a second undulated and more distinct one behind the middle: cilia fuscous, spotted with griseous: posterior wings with an oblique pale striga: abdomen fuscous, or tawny brown. Female similar.

Caterpillar cinereous, darker and varied on the back, with two pair of reddish dots on each segment; it varies much: and feeds on oak, aspen, birch, poplar, lime, whitethorn, rose, and fruit trees, and is found in June; changes in a silken folliculus in the earth: *pupa* anteriorly brown, posteriorly reddish: the imago appears in December.

Not common, found in the lanes about Darenth, Birch, and Coombe woods, and near Hertford. “Near Leatherhead.”—*W. Ruddon, Esq.* “Coleshill.”—*Rev. W. T. Bree.* “Rare near York.”—*W. C. Hewitson, Esq.* “Ongar-park.”—*Mr. H. Doubleday.*

GENUS LIII.—ERIOGASTER, *German.*

Palpi short, distinctly triarticulate, the basal joint longest and stoutest, the terminal minute, ovate, subacute: *maxillæ* obsolete. *Antennæ* bipectinated in the males, the pectinations decreasing in length to the apex, slightly serrated in the females: *head* small, pilose: *thorax* very stout, pilose above and below:

abdomen robust and elongate in the females; moderate, and rather abbreviated in the males; densely clothed in both sexes with short down, and the apex in the female with a large woolly mass: wings elongate, entire, subdiaphanous, slightly reversed during repose: cilia short: legs short, femora and tibiæ densely clothed with wool. Larva gregarious, cylindric, pilose, semi-annulated: pupa short, obtuse, not dentate at the apex, enclosed in a rigid ovate cocoon.

From the preceding and following genera, which somewhat resemble Eriogaster in the texture of their wings, this may be known by the stoutness and woolliness of their bodies, especially of the females, and the brevity of the cilia: the males are further distinguished from those of *Pœcilocampa* by the more slender and acuminate antennæ, and from *Cnethocampa* by their comparatively greater length and straightness; and the females from those of the former genus by the downy mass at the apex of the abdomen, and from those of the latter by the superior bulk of their body and tenuity of their antennæ. Larvæ gregarious, inhabiting a general nest, which they enlarge from time to time, leaving it during the night in search of food, but returning before morning, and finally quitting it when they are about to undergo their change, which they effect on the surface of the ground, in an oval rigid cocoon: eggs deposited in an irregular mass on slender branches, and covered by a cinereous down.

Sp. 1. Lanestris. *Alis subferrugineis, strigâ albâ, anticis puncto basique albis.*
(Exp. alar. ♂ 1 unc. 2—4 lin.: ♀ 1 unc. 6—10 lin.)

Ph. Bo. Lanestris. *Linné.—Don. vi. pl. 310. ♀.—Er. Lanestris. Steph. Catal. No. 5994.*

Antennæ brownish-yellow: thorax brown or griseous: abdomen fuscous at the base, the apex paler: the anterior wings subferruginous, with a large spot at the base (with a dark cloud in the centre in the male), and another on the disc, and an obsoletely denticulated incurved striga behind the middle white: the hinder margin rather ashy: cilia griseous, interrupted by whitish: posterior wings, cinerascens in the male, griseous in the female, with an obsolete central striga. Female larger, with the downy mass at the apex of the abdomen cinereous.

Both sexes vary considerably, the hinder margin of the anterior wings is sometimes without the ashy shade.

Caterpillar black, or brownish, with two red patches on each segment between abbreviated subannular white streaks, and a yellowish lateral line: it feeds upon sloe, birch, lime, willow, fruit trees, whitethorn, &c. in June: pupa brown: imago flies in February and March.

Not uncommon, at times, in the neighbourhood of Darent-wood, and in other places near the metropolis. I have occasionally seen

twenty or thirty nests of the larvæ in the hedges round Hertford during one season, while in others not a single example has occurred. "Larvæ frequent in certain seasons, near Bottisham."—*Rev. L. Jenyns*. "Epping."—*Mr. H. Doubleday*.

GENUS LIV.—CNETHOCAMPA * *mihi*.

Palpi very short, enveloped in elongate hairs, triarticulate, the basal joint longer and stouter than the second, terminal minute, slender, rather acute: *maxilla* obsolete. *Antennæ* short, slightly curved, bipectinated in the males, serrated in the females, the pectinations gradually decreasing in length to the apex: *head* distinctly visible from above: *thorax* stout, hairy: *abdomen* rather elongate, tufted, the apex of the female with a woolly mass: *wings* slightly reversed, obscurely diaphanous: *cilia* not abbreviated: *legs* slender: *femora* and *tibiæ* pilose. *Larva* gregarious, cylindrical, hairy: *pupa* also gregarious, obtuse, bidentate posteriorly, enclosed in a rigid cocoon.

In a comment on the genus *Gastropacha*, it is remarked, with reference to the great difficulty of characterizing Lepidopterous genera, from the obscurity of the trophi, that "the characters to be derived from the habits of the species will only be sufficient to divide them into *families*;" but it is evident that their habits, as in other departments of nature, sufficiently point out *genera* when duly investigated, and it is equally evident that a genus which contains such discordant insects as a union of this, *Trichiura*, and *Clisiocampa* (without pointing out the peculiar habits, &c. of the respective species), must not only be strictly artificial, and lead to error, but clearly shows the absurdity of attempting to reduce genera, which, it has been justly observed, *cannot* be done with impunity, when the advancement of science is the *primary object* in view. *Cnethocampa*, in common with the two preceding genera, has the wings somewhat elongated in both sexes; from the first, the males differ by the tenuity and brevity of the antennæ and their pectinations, and the females by having a downy tuft at the apex of their abdomen; from *Eriogaster*, both sexes differ by the elongation of the cilia, exclusively of differences in the trophi, &c.: the habits of the larvæ, as hereafter noticed, are remarkably dissimilar to those of the above genera, and their hairs, when applied to any part of the body, cause very great irritation and acute pain, especially those of *Cn. Pityocampa*; the exhibition thereof

* *Κνηθω*, pruritus moveo, *καμπτω*, curva.

medicinally, no less than two enactments of the Roman senate prohibited, under severe penalties, by reason of their virulence. The pupæ are gregarious, and bidentate posteriorly: the eggs are enveloped in down.

† Sp. 1. processionea. *Alis cinereo-fuscis: fæminæ strigâ obscuriore, maris tribus.* (Exp. alar. ♂ 1 unc. 3—5 lin.: ♀ 1 unc. 4—8 lin.)

Ph. Bo. processionea. *Linné.—Martyn (!)—Cn. processionea. Steph. Catal. No. 5995.*

Antennæ dusky-brown: head and thorax ashy-gray: abdomen brownish, with the apex dusky: anterior wings ashy-brown, with three waved, dusky, or black strigæ, two approximating near the base, the other towards the hinder margin: posterior wings paler, with one oblique striga: female more obscure, with an indistinct fascia near the base, and an obsolete dusky striga towards the hinder margin of the anterior wings: posterior wings dull ochraceous, with an indistinct fascia.

Caterpillar blackish on the back, with cinereous-brown lines on the sides, and yellowish dorsal spots: feed on the oak, and change into pupæ, anteriorly brown, posteriorly yellowish, in a common receptacle: each larva forming a separate rigid cocoon of silk and hair for itself, and the whole being arranged in the nest like the cells of the honey-comb.

The larvæ, when first hatched, construct a temporary nest for themselves on the branches of the oak, and change their situation from time to time, until they are about two-thirds grown, when the entire brood unite in forming a general nest on the trunk: this nest, when completed, is about eighteen inches long, six broad, and composed of a gray silk, resembling the surface of the tree: but the most curious fact in their history is the extraordinary regularity with which the larvæ proceed, towards sunset, in search of food: at their head is a chief, by whose movements their procession appears regulated; he is followed by three or four in a single line, the head of the second touching the tail of the first, &c.: then comes an equal series of pairs, next of threes, and so on as far as fifteen or twenty, forming a band several feet in length: sometimes the order is rather different, the leader being followed by two, then three, four, and so on; but at all times the procession moves on with an even pace, each file treading upon the steps of those that precede it, through all the sinuosities made by the chief. They do not invariably return to their nest before morning, but may sometimes be found during the day assembled in irregular masses, heaped upon each other.

Martyn introduces this as a British species, and Stewart has followed his example; but I have not seen an indigenous specimen; the one reputed to be in the British Museum being apparently a stunted female of *Cn. Pityocampa*. It is said there is great danger in approaching the nests of this species, on account of the fragments of hairs which float about in its vicinity, which renders it a fortunate circumstance that the insect does not inhabit Britain, although the contemplative entomologist must necessarily be debarred from the interesting spectacle of their procession.

† Sp. 2. *Pityocampa*. *Alis griseis, strigis tribus obscurioribus, posticis pallidis, liturâ anali fuscâ.* (Exp. alar. 1 unc. 8 lin.)

Bo. *Pityocampa*. *Fabricius*.—Cn. *Pityocampa*. *Steph. Catal. No. 5996.*

Wings more elongate and narrow than in the last: anterior griseous or cinereous, with three dusky undulated strigæ, the two basal ones nearly parallel, the third united by an acute angle to the second, with a dusky lunule between on the disc: cilia ashy spotted with white: posterior wings pale, with a dusky spot at the anal angle: antennæ reddish-yellow: head and thorax ashy-gray: abdomen brown.

Caterpillar blackish or dusky-gray, with a whitish lateral line and margins to the segments, the dorsal hairs luteous, the lateral whitish: it feeds on various kinds of pine and fir, and changes to a pale brown pupa, beneath stones or under moss, in a reddish-brown cocoon.

There appears to be a single dwarf specimen or a variety of this insect in the collection at the British Museum; it was taken by Dr. Leach in Devonshire, in the summer of 1825. The larvæ are less regularly processional than those of the preceding species, and the pupæ are less social.

GENUS LV.—CLISIOCAMPA, *Curtis*.

Palpi minute, concealed by scales, triarticulate, the basal joint shorter and more slender than the second, the terminal joint very minute, oval: *maxillæ* obsolete. *Antennæ* short, curved, moderately bipectinated in both sexes, the pectinations gradually decreasing in length to the apex, and shortest in the females: *head* minute, scarcely visible from above: *thorax* robust, pilose: *abdomen* somewhat elongate, robust in the females, and slightly tufted in both sexes: *wings* rather acute, a little reversed when at rest, short in the male, elongate in the female: *legs* rather slender: *femora* and *tibiæ* pilose. *Larva* cylindrical, slightly pilose, gregarious: *pupa* elongate, posteriorly attenuated; enclosed in a loose silken web, suffused with a fine powder.

Clisiocampa may be known from the preceding genus, which resembles it in its abbreviated, incurved antennæ, by the opacity and brevity of its wings, and from all the foregoing by the shortness of its antennæ, and acuteness of its wings. The larvæ are gregarious, irregularly processional; frequently change their habitation, and previously to their metamorphosis into pupæ retire solitarily, and effect their transformation: the pupæ elongate, attenuated posteriorly, and enclosed in a double silken powdery web: the eggs are naked, and placed in rings round the young twigs of plants.

Sp. 1. *castrensis*. PLATE 13. f. 2. ♂.—*Alis anticis maris pallidis, strigis duabus fasciâque posticâ brunneis; fæminæ ferrugineis fasciis duabus pallidis.* (Exp. alar. ♂ 1 unc. 2—4 lin.: ♀ 1 unc. 6—9 lin.)

Ph. Bo. castrensis. *Linneé*.—Ch. castrensis. *Curtis*, v. pl. 229. fig. sup. ♂ var. fig. inf. ♀. *Steph. Catal. No. 5997*.

Antennæ griseous, with a yellow shaft: thorax yellowish: abdomen luteous: anterior wings ochraceous or pale straw colour, with two luteous or castaneous strigæ frequently united, the basal one generally incurved towards the base of the wing, as in the accompanying figure, and sometimes the two forming a bar across the wings; towards the base are usually one or two castaneous or fawn-coloured clouds, and between the outer striga and the hinder margin is an obscure irregular-waved streak of the same colour: posterior wings fawn-coloured, with lutescent cilia, and an obscure pale streak. Female larger and stouter, dull chestnut-brown, with two oblique luteous or straw-coloured strigæ.

Scarcely two specimens of this inconstant species are found precisely similar, they vary so considerably.

Caterpillar bluish, with irregular red and black streaks above, and red lateral lines; the hirsuties pale castaneous: it feeds on various plants, particularly sea wormwood (*Artemisia maritima*), also on birch, plantain, carrot, and various Euphorbiæ: it prepares to undergo its change in the beginning of July, and in August the imago appears: the pupa is dark coloured.

This is apparently a maritime species, at least in Britain; but not strictly local, having been captured in the Isle of Sheppey, and on the coasts of Essex, Kent, and Devonshire: specimens are contained in the cabinets of the British Museum, of Messrs. Haworth, Swainson, Vigors, in my own, &c. “Mouth of the Exe.”—*Dr. Leach*.

Sp. 2. Neustria. *Alis rufo-ochraceis, fasciâ saturiore mediâ, utrinque strigâ pallidâ terminatâ*. (Exp. alar. ♂ 1 unc. 3—6 lin.: ♀ 1 unc. 6—10 lin.)

Ph. Bo. Neustria. *Linneé*.—*Don*. iii. pl. 95.—Cl. Neustria. *Steph. Catal. No. 5998*.

A most variable insect, and considerably resembling the foregoing: the male usually has the antennæ, thorax, and abdomen of a rusty fox-colour; the anterior wings the same, with two yellowish oblique strigæ, the space between deepest, the cilia a little spotted with yellowish; posterior wings usually immaculate ochraceous-red, with the cilia darker: the female pale ochraceous, with a broad oblique central fascia on the anterior wings, margined with pale-yellowish; the posterior wings rather darker, with a transverse dusky streak; cilia of all the wings spotted with ochraceous and fox-colour.

Var. β. Male of a bright ochraceous yellow, with two slender oblique fawn-coloured strigæ on the anterior wings, the cilia of all spotted with dusky and ochraceous.

Var. γ. Both sexes with the thorax and base of the anterior wings ochraceous, the latter followed by a broad fawn-coloured band, margined externally with yellowish, the hinder margin rusty fox-colour.

Var. δ. Both sexes of a deep uniform rusty fox-colour, with two pale indistinct ochraceous oblique streaks on the anterior wings.

The width and form of the central fasciæ on the anterior wings varies excessively, as well as the size of the insect.

Caterpillars glaucous, with three red lines on each side, and a white one down the back: they feed gregariously on various trees, especially oak, hazel, sloe, and fruit trees; they reside in a common web, enlarging it from time to time, until their separation; they are great pests to fruit-trees, which are sometimes quite defoliated by them: in changeable weather, I have observed that all the individuals which happen to be resting on the outside of the nest simultaneously and repeatedly elevate the anterior part of their body, as the larvæ of *Hylobius Pini* are said to do. The pupa of this insect is of a dull lead colour, covered with fine powder: the imago appears in July and August.

A very abundant insect in the southern parts of Britain, frequenting hedges and gardens. "The pest of our hedges, which in some seasons are entirely stripped of their leaves by the larvæ, and laid as bare as in the depth of winter."—*Rev. L. Jenyns*. "Suffolk."—*W. C. Hewitson, Esq.*

GENUS LVI.—EUTRICA, *Hübner*.

Pulpi not very long, porrected, triarticulate, two basal joints of equal length, terminal more slender and obtuse: *maxillæ* short, a little spiral. *Antennæ* nearly straight, not very short, deeply bipectinated in the males to the apex, which is a little bent, slightly bipectinated in the females: *head* small: *thorax* robust, densely pilose: *abdomen* the same, rather elongate; more robust in the females: *wings*; *anterior* entire, rounded posteriorly; *posterior* obsoletely denticulated, reversed during repose: *legs* rather slender, not very pilose, with minute spurs at the apex of the tibiæ. *Larva* cylindrical, with fascicles of hairs down the sides, and a tubercular eminence on the penultimate joint: *pupa* short, obtuse, enclosed in an elongate subfusiform loosely-constructed cocoon.

Agreeably to the principles which ought to guide us in the formation of genera, as noticed in page 38, the present *must* be detached from *Odonestis*, from which it differs in having the antennæ shorter and straighter, and less pectinated, the thorax and abdomen more densely pilose, the palpi less prominent, and, when denuded, with the two basal joints of equal length.

Sp. 1. *Pini*. *Alis* rufo-griseis, fasciâ lobatâ ferrugineâ utrinque fusâ, ante medium puncto triangulari albo. (Exp. alar. ♂ 2 unc. 7—10 lin.: ♀ 3 unc. 6—8 lin.)

Ph. Bo. *Pini*. *Linné*.—*Odo. Pini*. *Curtis*, i. pl. 7.—*Eu. Pini*. *Steph. Catal.* No. 5999.

Griseous: the anterior wings dark-griseous at the base, sprinkled with minute white dots, with a large triangular white spot before the middle, then an ob-

scure cinerescens fascia, followed by a somewhat ferruginous band, lobated posteriorly, and irregularly margined on each side with fuscous and pale griseous; the hinder margin is of an ashy-griseous: the posterior wings are deep immaculate griseous: the female larger and paler.

Caterpillar variegated with white, gray, and brown, with the anterior segments adorned with two blue transverse dorsal streaks, and some red spots on the sides: it feeds on various species of pine, forms an elongate yellowish-gray web, and changes to a brown pupa, with the abdomen reddish.

Unquestionably a rare insect in Britain; so far as my information extends, one specimen only has been captured within the last thirty years; that was taken by Mr. Sparshall, in the Norwich Hospital, in July, 1809; and a reputed British specimen is in the collection of Mr. Vigors. Wilkes, who first notices it as a British insect, tells us that he once found the larva in a white thorn, near Richmond Park, but he did not succeed in rearing it to perfection.

GENUS LVII.—ODONESTIS, *Germar.*

Palpi elongate, porrected, hairy, triarticulate, the basal joint not half as long as the second, the terminal rather larger than the basal, obtuse: *maxillæ* obsolete. *Antennæ* slightly curved near the base, bipectinated, especially in the males, to the apex: *head* small: *thorax* stout, loosely but thickly pilose; *abdomen* the same, elongated, and tufted at the apex in the males, somewhat acute and stout in the females: *wings* reversed when at rest; *anterior* rather acute at the tip, the posterior margin rounded, entire; *posterior* slightly denticulate: *legs* stout, densely pilose, especially in the males, with spurs at the apex of the tibiæ. *Larva* robust, cylindric, with fascicles of hair down the sides, a distinct tuft on the neck, and another placed on a minute tubercle on the penultimate joint: when alarmed, it rolls itself in a ring: *pupa* robust, obtuse, placed in a fusiform, closely-woven, luteous cocoon.

Odonestis has the palpi more hairy and prominent than Eutricha, and the second joint above twice the length of the first; the antennæ are more curved towards the base, and more deeply pectinated; the anterior wings acute at the apex; the thorax and abdomen less compactly pilose, and the legs shorter, stouter, and densely clothed (the femora and tibiæ especially) with elongate hairs.

Sp. 1. *potatoria*. *Alis luteis, flavo nebulosis, strigis duabus obliquis brunneis, lunulâ punctoque albis.* (Exp. alar. ♂ 2 unc. 4—6 lin.: ♀ 2 unc. 8 lin.—3 unc.)

Ph. Bo. *potatoria*. *Linneé.—Don. v. pl. 148.—Od. potatoria. Steph. Catal. No. 6000.*

Pale luteous-griseous: anterior wings griseous, clouded with ochraceous-yellow, the base brownish at the costa, with a transverse, slightly-undulated, and sometimes abbreviated, dusky-brown striga, and another, behind the middle, reaching obliquely from the apex: between these, on the disc, is a sublunate whitish spot, and a smaller and whiter one between this and the costa: the hinder margin of the wing has frequently an undulated brown striga: posterior wings immaculate griseous, with a transverse brown streak. Female similar in markings, but of a pale ochraceous yellow, or yellowish.

Var. β . Both sexes very pale ochraceous, with the usual markings very obsolete.

Var. γ . Female of a deep fawn-colour, clouded with luteous, and marked as in var. α .

Caterpillar dusky-brown, with a lateral yellow line and white spots on the sides above the legs: it is found in June, on various kinds of coarse high grasses, and changes into a brown pupa: the imago appears in July.

Very abundant in lanes, hedges, and woods, in the neighbourhood of London, especially in Hagbush-lane, Copenhagen-fields, the lanes near Garrett-green, and at Ripley and Hertford. "Sundridge, Kent, in plenty."—*Mr. Ingpen*. "Abundant near Andover."—*Rev. G. T. Rudd*. "Throughout the fens of Cambridgeshire, in the greatest profusion."—*Rev. L. Jenyns*. "York and Newcastle-upon-Tyne."—*W. C. Hewitson, Esq.* "Abundant near Barnstaple, Devon."—*W. Raddon, Esq.*

GENUS LVIII.—GASTROPACHA, *Ochsenheimer*.

Palpi elongate, porrected, hairy, triarticulate, the second joint longest, the terminal obtuse: *maxillæ* very small. *Antennæ* short, recurved, strongly bipectinated in both sexes: *head* small, with an acute projecting hairy tuft: *thorax* and *abdomen* robust, densely pilose, the latter acute in the female: *wings* dentated, reversed during repose: *legs* moderately stout: the *femora* and *tibiæ* pilose. *Larva* broad, rounded above, with fascicles of hair on the sides, each segment with a fleshy lateral appendage, and on the penultimate joint a distinct truncated tubercle: *pupa* obtuse, enclosed in an oblong broadly constructed cocoon, and covered with a whitish powder.

The stout recurved antennæ (which are nearly alike in both sexes), and dentated wings, at once discriminate this genus from all the foregoing: the caterpillars are also remarkable from the fleshy lateral appendages, or lappets, with which each segment is furnished, from whence has originated the name of *Lappets*, which has been applied to the imago.

Sp. 1. *Quercifolia*. *Alis ferrugineis, strigis undatis fuscis margineque postico nigris*. (Exp. alar. ♂ 2 unc. 3—10 lin.: ♀ 3 unc. 2—4 lin.)

Ph. Bo. Quercifolia. *Linné*.—Ga. Quercifolia. *Curtis*, i. pl. 24.—*Steph. Catal.* No. 6001.

Body, antennæ, and palpi of a deep dusky or brown ferruginous, the two latter darkest: wings the same, the anterior with three oblique waved dusky strigæ, and a central black spot; the posterior immaculate. Female larger, of a lighter hue, with the strigæ darker.

Both sexes vary considerably; the strigæ on the wings are sometimes nearly obsolete, at others very deep and broad: the posterior wings are occasionally marked with one or more oblique transverse dusky strigæ.

Caterpillar very large, variable: dusky or slightly rufescent, with blue patches on the nuchal segments, and sometimes a double series of white and red spots down the sides: it is found in May, and feeds on the whitethorn, sloe, willow, rose, &c.; and changes, in a powdery web, to a brown pupa, with red fasciæ: the imago appears in July.

Although usually reputed an uncommon insect, this frequently appears in considerable plenty, especially in the larva state: in May, 1814, I found many of the latter in the Robin Hood-lane, leading to Coombe-wood; and have since found both the larva and imago in the lanes near Hertford; the former feeding upon the sloe. "Very abundant in May last, in the larva state, upon willows in Bottisham and Swaffham fens. I have also occasionally noticed them in former years, both in the caterpillar and winged state."—*Rev. L. Jenyns*.—"Epping."—*Mr. H. Doubleday*.

† Sp. 2. Ilicifolia. *Alis cinereis rufo nebulosis, fuscâ maculari albidâ*.

Ph. Bo. Ilicifolia. *Linné*.—Turton (!).—Ga. Ilicifolia. *Steph. Catal.* No. 6002.

One-fourth the size of the foregoing; griseous: the wings cinereous, clouded with rufous, with a posterior fascia of whitish spots.

Caterpillar feeds on the sawfly; it is glaucous, with a broad white dorsal band, in which is a black patch, varied with luteous, on each segment, beneath yellowish: chrysalis bluish, with the abdomen bluish-white.

Turton introduces this as a British insect; but I have not yet seen an indigenous example.

† Sp. 3. Populifolia, *Alis luteo-testaceis, lunulis numerosis fuscis*.

Ph. Bo. Populifolia. *Fabricius*.—Martyn (!).—Ga. Populifolia. *Steph. Catal.* No. 6003.

As large or larger than Ga. Quercifolia; thorax testaceous, with a black dorsal line: wings pale yellowish-testaceous, with numerous distinct fuscous lunules, disposed in strigæ; the hinder margin palest.

Caterpillar feeds on the poplar: it is ashy-gray, spotted with rust-colour, and some bluish-black marks on the neck.

Of this insect (which was introduced into the British list by Martyn), I have also never seen an indigenous example.

FAMILY IV.—ARCTIIDÆ, *Leach*.

Palpi two, rather small, mostly triarticulate, pilose; rarely wanting: *maxille* generally short, somewhat membranaceous, sometimes obsolete. *Antennæ* moderate, bipectinate or ciliated, sometimes serrated, the pectinations simple or ciliated, and furnished with one or more bristles at their apex: *thorax* rarely crested, stout: *body* not very robust; the apex of the males usually tufted, and of the females occasionally furnished with a woolly mass: *wings* deflexed, or horizontal, entire. Males usually smaller, but not unfrequently larger, than the females. *Larvæ* generally very hairy, frequently ornamented with several compact tufts of hair on the back, and elongate ones on the neck or tail; occasionally naked, enclosed in a covered moveable case, or free: *pupa* various, mostly folliculated.

The insects which I have included in this family are considerably diversified in habit, and I do not feel satisfied with the location of several of the genera; but, without materially increasing the number of families, no better situation presents itself for their reception; their diversities will be hereafter pointed out: it may be sufficient to notice in this place, that the typical genera form the genus *Arctia* of Schrank, a name imposed by him from the hairiness of their larvæ, and which has consequently been used to designate the family. As among the *Bombycidæ*, the larvæ of many genera are gregarious, and the males of the perfect insect assemble in search of their virgin females, and fly with great celerity in the afternoon. One group, *Psyche* and its congeners, approaches closely to the *Hepialidæ*; and another, *Limacodes* and *Heterogenea*, to the first group of *Bombycidæ*, the cause of which will be rendered very evident by an inspection of the diagram in my catalogue: these groups differ materially from the true *Arctiidæ* and from each other, and offer some most interesting facts, which will be subsequently detailed.

If the two great genera, *Laria* and *Arctia* of Schrank, require further division (and such appears to be the universal opinion of modern writers), it necessarily follows that, unless that subdivision is carried on to the utmost, dissimilarly constructed species must inevitably remain united: I have therefore been compelled to divide the indigenous species into the following genera; which may be known by the subjoined table, formed, as far as possible, from external characters.

A. *Maxilla* obsoletæ.a. *Alæ* plus minusve diaphanæ, vix aut non squamosæ.

<i>Alæ</i>	{	haud squamosæ,	{	rotundatæ, pilosissimæ :	. . .	76. FUMEA.
				elongatæ, subacutæ :	. . .	75. PSYCHE.
		squamis minutis sparsis instructæ :			. . .	74. PENTHOPHERA.

b. *Alæ* opacæ, densè squamosæ.

<i>Antennæ</i>	{	pectinatæ aut ciliatæ : <i>Tarsi antici</i>	{	vix pilosæ, subgra- ciles : <i>Palporum</i> <i>articulo 1-mo</i>	{	minuto : . . .	59. HYPOGYMNA.
						elongato, clavato :	60. PSILURA.
	{	valdè pilosæ, {	elongatæ : 61. DASYCHIRA.			
					crassiores : <i>Alæ</i> {	abbreviatæ, triangu- lares aut nullæ : . 63. ORGYIA.	
	{	simplices : <i>Alæ</i> {	triangulares, posticè subtruncatæ :	73. HETEROGENEA.			
					elongatæ, posticè rotundatæ : . 79. LIMACODES.		

B. *Maxilla* distinctæ, vix capite longiùs.a. *Alæ* opacæ, densè squamosæ.

<i>Thorax</i>	{	cristatus :	{	annulatum, aut	{	2-do longiore; {	subacuto: . 62. DENAS.
		haud cri-		maculatum: {		articulo 3-tio {	breve, . 69. ARCTIA.
		status:		<i>Palporum</i>		ovato: . 72. SPILOSOMA.	
		<i>Corpus</i>		articulo 1-mo		2-do brevior; {	cylin-
						articulo 3-tio {	drico: . 63. EUTHEMONIA.
							globoso: 70. NEMEOPHILA.
				inmaculatum, apice cristato:			66. PORTHESIA.

b. *Alæ* plus minusve diaphanæ, squamis rarioribus adpersæ.

<i>Corpus</i>	{	inmaculatum : <i>Palpi</i>	{	elongatæ, pilosissimæ :	. . .	64. LÆLIA.
				abbreviatæ, acutæ :	. . .	65. LEUCOMA.
		maculatum : <i>Palpi</i>		vix distinctæ, pilosæ :	. . .	71. PHRAGMATOTIA.
				distinctæ, squamosæ :	. . .	73. DIAPHORA.

C. *Maxilla* capite multo longiores.

<i>Alæ</i>	{	densè squamosæ :	67. HYPERCOMPA.
		diaphanæ, pilosæ :	77. NUDARIA.

GENUS LIX.—HYPOGYMNA, *Hübner*.

Palpi hairy, short, triarticulate, the basal joint minute, second elongate subclavate, terminal ovate, obtuse; *maxilla* obsolete. *Antennæ* short, acute at the tip, very strongly bipectinated in the males, slightly in the females: head minute, with a downy tuft: *thorax* and *abdomen* stout, woolly, the latter very robust and obtuse in the female, and terminated by a downy mass, rather attenuated, and furnished with a hairy tuft in the male: *wings* deflexed, not very densely clothed with scales; *legs* not very stout; *femora* and *tibiae* slightly fringed with long hairs. *Larva* elongate, cylindric, with short, rigid hairs on the back, and elongate fascicles on the sides of the head, and at the tail: *pupa* slightly hairy, the apex with a truncate projection: it changes in a loose cocoon.

Hypogymna and the following genus are unquestionably greatly allied, and were it not from the circumstance of the structure of the palpi rendering such a step necessary, I should not have separated them; but the dissimilarity in the proportions of the joints of the palpi, and in the abdomens of the respective females, sufficiently point out the propriety of dividing them, if, as before stated, the *Lariæ*, &c. of Schrank, are disturbed: both species are placed by Ochsenheimer in his genus *Liparis* (a name which cannot be employed generically in entomology, having been properly used by Cuvier for a *genus* of fishes), along with *Leucoma*, *Porthesia*, and *Penthophera*.

Sp. 1. dispar. *Alis maris griseo fuscoque nebulosis, fœminæ albidis nigro-striatis.*
(Exp. alar. ♂ 1 unc. 6 lin.—2 unc. 1 lin.: ♀ unc. 8 lin.—3 unc. 1 lin.)

Ph. Bo. dispar. *Linné.*—*Don. v. pl.* 163.—*Hy. dispar. Steph. Catal. No.* 6004.

Male with the antennæ, thorax, and abdomen hoary-griseous: the anterior wings clouded with cinereous and brown, sometimes nearly black, with obscure dusky waves, the cilia brown and griseous; posterior wings griseous immaculate. Female much larger, with the antennæ black; the head and thorax whitish, the abdomen very stout, griseous-white, with the apex dusky-black or brown: the wings white; the anterior with one or more undulated transverse strigæ, and costal spots, and a dusky black lunule; cilia spotted with dusky.

Both sexes vary considerably; the male is sometimes very pale fuscous, at others almost black; the female has the abdomen sometimes entirely whitish, and the wings more or less suffused with cinereous or dusky; the posterior wings are occasionally immaculate, and sometimes they have an undulated transverse fascia.

Caterpillar dusky, with whitish lines, the anterior part spotted with bluish, the posterior with red: it feeds on the oak, lime, fruit-trees, &c., in June, and changes to a brown pupa: the imago appears in August: the eggs are covered with down.

Not common in the neighbourhood of London; it has occasionally been taken at Coombe-wood, but in the fens of Huntingdonshire it appears to abound, and may be taken in all its states at one time, as the imago frequently appears long before all the larvæ have changed into pupæ. It is said to have been introduced into Britain by eggs imported by Mr. Collinson; but the abundance with which it occurs near Whittlesea, and the dissimilarity of the indigenous specimens (which are invariably paler, with stronger markings) to the foreign, sufficiently refute that opinion.

GENUS LX.—PSILURÆ * *miki*.

Palpi very hairy, triarticulate; the basal joint nearly half as long as the second, somewhat clavate; the second elongate, clavate; the terminal ovate, acute, *maxilla* obsolete. *Antennæ* short, acute, very strongly bipectinated in the males, slightly in the females: *head* small, very pilose: *thorax* rather short and downy: *abdomen* slender, and tufted at the apex in the male, rather short and attenuated in the female, with the apex acute and naked: *wings* deflexed, thickly clothed with scales: *legs* not very slender; *femora* and *tibiæ* fringed with hairs. *Larva* elongate, attenuated posteriorly, with fascicles of hair on the back and sides; those behind the head, and on the penultimate segment longest: *pupa* smooth, with tufts of hair on the segments, the terminal one with an obtuse projection: changes in a loose folliculus.

This genus differs from the foregoing by having the basal joint of the palpi elongate, somewhat triangular and clavate, the terminal acute, and closely allied to the preceding; the female has the abdomen moderately stout, and attenuated posteriorly, with the ovipositor exposed.

Sp. 1. Monacha. *Alis albis atro undatis, incisuris abdominis sanguineis.* (Exp. alar. ♂ 1 unc. 3—9 lin.: ♀ 1 unc. 9 lin.:—2 unc. 5 lin.)

Ph. Bo. Monacha. *Linné.—Don. vii. pl. 227.—Ps. Monacha. Steph. Catal. No. 6005.*

Thorax white spotted with black; of the male with a black lateral line: abdomen hoary, with the terminal segments sanguineous spotted with black: anterior wings white, with various rarely confluent black spots at the base, a single distinct one before the middle, three or four confused waved strigæ behind, another distinct towards the hinder margin, then a marginal row of black dots: posterior dusky, with black and white cilia; or pale ash, with a darker margin, and white dusky spotted cilia. Female larger and paler; in other respects similar to the male.

Var. β. With the striga on the anterior wings united so as to form a deep black patch.

Both sexes vary considerably: in some males the posterior wings are deep fuscous, and in others nearly white, with a white marginal striga; the females vary similarly.

Caterpillar ashy-brown, with red dorsal tufts, and a black heart-shaped spot on the second segment: it feeds on various trees, particularly the oak and bramble: it is found in June, and changes to a black hairy pupa: the moth is produced in July: eggs naked.

Sometimes, though rarely, found at Coombe and Darenth woods;

²² Ψιλος; nudus, ουρα cauda.

but in great plenty on the oaks, near Brockenhurst, in the New Forest. “Epping.”—*Mr. H. Doubleday.*

GENUS LXI.—DASYCHIRA, *Hübner?*

Palpi very short, hairy, triarticulate; the basal joint about one-third the length of the second, and more slender, the terminal ovate, acute: *maxillæ* obsolete. *Antennæ* short, acute at the apex, thickly bipectinated, especially in the male; the pectinations deeply ciliated, and shortest in the females: *head* small, hairy: *thorax* rather stout, not crested: *abdomen* somewhat robust, especially in the females, woolly beneath: *wings* deflexed, elongate, thickly and densely covered with scales: *legs* short, stout, pilose; *femora* and *tibiæ* and *anterior tarsi* fringed with long hairs. *Larva* very hairy, with several compact truncated tufts on the back, and another on the tail: *pupa* hairy, enclosed in an ovate folliculus, its posterior extremity with an acute projection.

Dasychira differs more in its preparatory states, than in the imago, from the two foregoing genera; but the dissimilarity in its palpi and elongated wings, with its stout, fringed, and prominent anterior legs, well distinguish it from them: from *Demas* it may be known by its thorax not being crested, and from *Orgyia* by the acuteness of the apex of the antennæ and triarticulate palpi. The species of this genus considerably resemble those of *Cnethocampa*.

Sp. 1. *fascelina*. *Alis cinereis, anticis nigro-irroratis, strigis duabus fulvo-fuscis repandis.* (Exp. alar. ♂ 1 unc. 8—10 lin.: ♀ 1 unc. 8 lin.—2 unc. 2 lin.)

Ph. Bo. *fascelina*. *Linné.*—*Don.* xvi. pl. 576.—*Da. fascelina.* *Steph. Catal.* No. 6006.

Antennæ and thorax hoary, fuscous: anterior wings grayish-brown, with a griseous tinge, minutely irrorated throughout with black, with an obscure striga at the base, another before the middle, and a third much undulated behind the middle of a fuscous-brown, and between the latter and the hinder margin some obsolete fuscous or black transverse spots; and an undulated pale ash-coloured line: posterior wings dusky, with an obscure darker marginal fascia. Female larger and paler: the apex of the abdomen black. The posterior wings are sometimes immaculate in both sexes; and the colours of the markings on the anterior vary considerably, the strigæ being occasionally nearly black instead of fulvous: the hinder margin of the anterior wings has sometimes a row of interrupted black dots.

Caterpillar dusky, spotted with yellowish, with five dorsal fascicles of white hairs tipped with black, two fusiform brown ones on the head, and one at the tail: it feeds on various plants, especially the trefoil, dandelion, hop, bramble, oak, &c. in the autumn; and breeds through the winter, changing to a hairy brown pupa, with a pale dorsal hue in May: the imago appears in July.

Rather an uncommon species, occurring most frequently in the

woody districts of Kent and Bedfordshire. I have occasionally met with the young larvæ at Coombe-wood in the autumn.

Sp. 2. *pudibunda*. *Alis albo-cinereis, anticis maculâ mediâ lunari strigisque tribus undatis fuscis.* (Exp. alar. ♂ 1 unc. 8—11 lin.: ♀ 1 unc. 10 lin.—2 unc. 6 lin.)

Ph. Bo. *pudibunda*. *Linné.—Don. v. pl. 160. Da. pudibunda.—Steph. Catal. No. 6007.*

Anterior wings cinereous-white anteriorly, cinereous posteriorly; the base with an abbreviated fuscous striga, the middle with an irregular ashy-brown fascia, streaked with fuscous, the hinder margin with an undulated dusky striga, margined posteriorly with whitish, the margin itself generally spotted with dusky; the central fascia with a lunate stigma, and sometimes with several undulated whitish strigæ: posterior wings whitish-ash, with a dusky streak near the hinder margin, arising at the anal angle, and a central dusky lunule: thorax and abdomen ashy-white; antennæ whitish, with ferruginous radii. Female much paler, sometimes nearly white, with the strigæ on the anterior wings very distinct.

Caterpillar hairy, yellow, with the head luteous, the back with four whitish tufts on the back, and a larger reddish one on the tail: it feeds on various trees, and appears in September; the pupa is dusky anteriorly, and brown posteriorly, enclosed in a yellowish folliculus; the imago appears in June, and varies considerably; but a pupa which was found near Canterbury last autumn, and given to me, produced the moth in January last: and Albin tells us that he reared his specimens early in February.

Not uncommon in the neighbourhood of London, especially near Darenth-wood. "Hop-gardens, Kent, common; the caterpillars called *hop-dogs*."—*Mr. Ingpen.* "Epping."—*Mr. H. Doubleday.* "Very common at Kimpton."—*Rev. G. T. Rudd.*

GENUS LXII.—DEMAS* *mili*.

Palpi extremely short, enveloped in hair, triarticulate, the basal joints rather stoutest, the second nearly as long again as the preceding, the terminal minute ovate: *maxillæ* short, a little spiral. *Antennæ* rather elongate, acute, slightly bipectinated in the males, ciliated in the females: *head* small, pilose: *thorax* stout, crested: *abdomen* moderately stout, the back with hairy fasciculi; the apex with a tuft: *wings* deflexed, elongate, densely squamous: *legs* moderate; *femora* and *tibiæ* pilose; the anterior with a large naked lobate appendage anteriorly. *Larva* hairy, with two dorsal tufts, whiskers at the head, and a fascicle of hair at the tail: *pupa* smooth, with an acute termination posteriorly: changes in an ovate cocoon.

* *Δεμας*, nomen viri.

The name *Colocasia*, which was proposed by Ochsenheimer, being employed in Botany, it becomes necessary to change it; the crested thorax at once distinguishes this genus from the other *Arctiidae*, and its subspiral maxillæ from the foregoing genera; from which it also differs by the more slightly pectinated antennæ of the males, and simply ciliated antennæ of the females. There is but one indigenous species; but, according to the author above alluded to, a second occurs on the continent; and I may here take occasion to remark, that, although many of the genera of *Bombycidae*, &c. before described contain one British species only, many, such as *Eriogaster*, *Pæcilocampa*, &c. contain several continental ones, as do *Dasychira*, &c. among the present family.

Sp. 1. *Coryli*. *Alis anticis fusco-brunneis annulo liturisque atris, postice cinereis, strigâ obsoletâ undatâ fuscâ.* (Exp. alar. ♂ 1 unc. 1—6 lin. ♀ 1 unc. 3—5 lin.)

Ph. Bo. *Coryli*. *Linné.*—*Don.* ix. pl. 309. De *Coryli*.—*Steph. Catal.* No. 6008.

Anterior wings with an ashy patch at the base, tinged with griseous, then an interrupted dusky striga, followed by a broad rusty or dusky-brown fascia, in which are several irregular black lines and a black ring: this fascia is bounded by a dusky or black waved striga; the posterior half of the wings is pale cinereous, clouded with darker, with an undulated brownish striga, margined externally with yellowish, the cilia dusky, frequently spotted with white: posterior wings dusky, sometimes with a pale transverse band, at others cinereous at the base, with a broad marginal fimbria: thorax griseous, varied with fuscous; abdomen ashy-griseous, with dusky tufts on the back; antennæ pale-ferruginous. Female generally rather paler. Both sexes vary exceedingly in the brilliancy and distinctness of their markings, as well as in colour. Caterpillar red, with two deeper red tufts on the back, near the tail, and two elongate attenuated fascicles of hair on the neck; it feeds on hazel and birch, and appears in the middle of May and of September; the pupa is dusky before, brownish behind, and is enclosed in a pale folliculus: the imago is produced at the beginning of April, and a second time about the middle of July.

Of late years this insect has become very scarce near London, but formerly I used to capture it at Coombe-wood, not uncommonly, both in the larva and imago states: it has also occurred at Birch and Darenth woods. “Near Dublin, not unfrequent.”—*Rev. J. Bulwer*.

GENUS LXIII.—*ORGYIA*, *Ochsenheimer*.

Palpi short, compact, hairy, biarticulate, the basal joint small, the terminal large, broad, ovate, subacute: *maxillæ* obsolete. *Antennæ* short, deeply

bipectinated in the males, abruptly terminated: serrated in the females, each serrature producing a bristle: *head* small, hairy: *thorax* slender, not crested: *wings* deflexed, short, triangular, or wanting: *legs* rather stout, anterior elongated, the *femora* and *tibiæ* of all, and the *tarsi* of the anterior, fringed with elongate hairs. *Larva* with distinct fascicles of hair on the sides, and several dorsal tufts, two or more, composed of capitate hairs, on the sides of the body and head, one on the penultimate joint, and some shorter ones at the apex: *pupa* slightly pilose, with an acute spine at the tip: folliculus ovate, of a very loose texture.

The short triangular wings and abbreviated, subtruncate, deeply pectinated antennæ well distinguish the males of this genus, and the females are known by being apterous, and having serrated antennæ; both sexes have the terminal joint of the palpi very large, and the males the anterior legs elongated, and deeply fringed with hair: the latter sex of the common species may be frequently observed, during the autumnal months, even in the streets of the metropolis, performing its short, jerking, vacillating flight, and resting at intervals with extended anterior legs and elevated antennæ.

Sp. 1. *antiqua*. *Alis ferrugineis, anticis strigis duabus obsoletis obscurioribus maculæque anguli ani niveâ; femina abdomine cinereâ.* (Exp. alar. 1 unc. 2—6 lin.)

Ph. Bo. *antiqua*. Linné.—Don. i. pl. 16.—Or. *antiqua*. Steph. Catal. No. 6009.

Wings ferruginous; the anterior clouded with brown, with two rather obsolete undulated strigæ, a pale luteous crescent-shaped spot on the disc, and a snow-white sublunate spot at the anal angle; posterior immaculate. Female dark cinereous.

Var. β . With the posterior wings pale luteous. Female pale cinereous.

Caterpillar dusky, spotted with red, with a black patch on the back, thickly clothed with fascicles of hair, with four white tufts on the back, two dark whisker-like tufts of capitate hairs on the head, one on the tail, and two on the sides: it feeds on various trees, especially white and black thorn; and may be found from April to August: it changes to a dusky and yellow pupa; and the imago is found from July to October.

A very abundant insect throughout the metropolitan district; occurring in profusion at Hertford and Ripley, and in the streets of London.

Sp. 2. *gonostigma*. *Alis fuscis, anticis maculâ apicis fulvâ albo marginatâ alterâque anguli ani albâ; femina fusca.* (Exp. alar. ♂ 1 unc. 3—7 lin.)

Ph. Bo. *gonostigma*. Linné.—Don. ix. pl. 316.—Or. *gonostigma*. Steph. Catal. No. 6010.

Wings fuscous; anterior prettily varied with pale griseous, with a pale annular mark at the base, and another on the disc, the hinder margin with a dusky or pale streak, with a bright fulvous patch at the apex, near the costa, margined externally with white, and a semilunar white spot at the anal angle: cilia dusky, interrupted by pale griseous: posterior wings deep dusky-brown; the cilia irregularly whitish at the edges. Female deep fuscous.

Caterpillar black, spotted with red, with four pair of yellowish or luteous dorsal tufts, two composed of capitate hairs on the neck, one on each side of the body, and one at the tail, elongate and dusky: it feeds on various plants, and, like its congener, is to be found, for a considerable period, during the summer: it changes to a dusky or black pupa, posteriorly yellow: the imago is first observed in June, and continues till the end of August, but is scarce.

The *Orgyia* “assemble” vigorously, and I once had the pleasure of capturing some dozens of this rare insect at Coombe-wood, by means of a female that I fortunately reared from the larva. It occurs in several places near the metropolis, as at Lewisham, Erith, Greenwich, &c. “Bagley-wood, Oxon.”—*Rev. W. T. Bree*.

GENUS LXIV.—*LÆLIA mihi*.

Palpi elongate, projecting, very hairy beneath, the last joint exposed; triarticulate, the basal and terminal joints very minute, the second considerably elongated: *maxillæ* distinct. *Antennæ* moderate, shortest in the females, deeply bipectinated in the males, the pectinations terminating abruptly at the tip, and very short in the female, each pectination ciliated, and furnished at its apex with three or four divergent bristles: *head* small, pilose: *thorax* not crested, pilose: *wings* deflexed, rather narrow, trigonate, sparingly clothed with scales: *abdomen* rather elongated and stout, slightly tufted: *legs* moderate: the *femora* and *tibiæ* fringed with elongate hairs. *Larva* hairy, with four compact dorsal tufts, and one at the tail, and two elongate fascicles at the neck: *pupa* slightly pilose, acute at the tip; enclosed in an elongate compact yellow folliculus.

This and the two following genera form a portion of the extensive genus *Laria* of Schrank; the *Arctiæ* of that author embracing *Bombyx caja* of Linné and its congeners: that the miscalled genus *Arctia* requires subdivision is very evident. *Lælia* has the antennæ of the females shorter than those of the males, and nearly simple, those of the latter sex abruptly terminated, and their pectinations tipped with several divergent bristles; the females are generally smaller than the males, the body rather elongated, the palpi lengthened, projecting, very hairy beneath, with the basal joint very minute, and the second considerably elongated; the form and texture of the

wings are also different, and the larva is not only furnished with compact dorsal tufts, but constructs an opaque fusiform dense folliculus.

Sp. 1. *cænosa*. *Alis pallidè ochraceo-fuscis, strigâ posticâ punctorum obsoletorum fuscorum (aut albis immaculatis); palpis pedibusque luteis.* (Exp. alar. ♂ 1 unc. 7—9 lin.: ♀ 1 unc. 6—9 lin.)

Bo. *cænosa*. *Hübner*.—Ar. *cænosa*. *Curtis*, ii. pl. 68.—Læ. *cænosa*. *Steph. Catal. No. 6011.*

Head, thorax, radii of the antennæ, and anterior wings pale ochraceous-fuscous, the basal areolet and thinner margin whitish, the hinder margin with a curved series of more or less distinct fuscous spots, nearly parallel with the hinder margin: posterior wings ochraceous, or whitish, with a fuscous margin: cilia of all the wings ochraceous or whitish: abdomen whitish: palpi and legs luteous, with the inner side of the latter dusky. Female white, with the legs and palpi luteous.

Caterpillar dusky, spotted with ochraceous, with pale yellowish hairs; four light luteous-yellow dorsal tufts, two dark elongate fascicles of hair on the head, and one on the tail: it feeds on the burr-reed; and is found simultaneously with the imago at the end of July and the beginning of August: the pupa is deep glossy black, and is enclosed in an elongate fusiform cocoon.

This insect was discovered in profusion by Mr. B. Standish on the borders of Whittlesea Mere in July, 1820, while in search of the beautiful *Lycæna dispar*, though the larva had been taken by Mr. Dale in the same vicinity several years previously, without his being acquainted with its metamorphosis. I believe no other locality has yet presented itself.

GENUS LXV.—LEUCOMA, *Hübner*.

Palpi short, bent upwards, hairy, cylindric, triarticulate, the intermediate joint longest, the terminal shortest, obtuse: *maxillæ* very short. *Antennæ* acute, of equal length in both sexes, deeply bipectinated in the males, the pectinations gradually shortened towards the apex, ciliated, and furnished with one or two fine setæ at the tip, shortest in the females: *head* small, hairy, with a distinct fascicle of scales at the base of each antenna: *thorax* short, woolly: *abdomen* tufted in the males, very robust and acute in the females: *wings* deflexed, rather broad, trigonate, with remote scales: *legs* robust; *femora* and *tibiæ* slightly fringed with hair. *Larva* with fascicles of hair on each side, and sometimes with loose dorsal tufts: *pupa* slightly hairy, enclosed in a loose orbiculate cocoon: *eggs* enveloped in a friable silken matter.

Leucoma differs from *Lælia*, in having the palpi abbreviated, rather divergent, less hairy, and the projections of the joints dissimilar; the antennæ are of equal length in both sexes, and consider-

ably pectinated in the females; the latter sex is usually the largest; the head has a distinct tuft of elongate scales at the base of each antenna:—from *Porthesia* this genus may be known by the semi-transparency and breadth of its wings, the different proportions of the joints of the palpi, the comparatively greater length and nudity of its legs, and the want of a downy mass at the apex of the abdomen in the females.

† Sp. 1. *Vau-nigra*. PLATE 16. f. 2. ♀.—*Alis niveis, anticis V nigro parvo notatis*. (Exp. alar. ♂ 1 unc. 9 lin.: ♀ 1 unc. 10 lin.)

Bo. *Vau-nigrum*. *Fabricius*.—*Leu. Vau-nigra*. *Steph. Catal. No. 6012*.

Wings snow-white, with the nervures slightly fuscous, and a deep black V-shaped spot in the centre of the anterior towards the costa, the point looking towards the base of the wings: antennæ with the shaft white, the radii fulvous: body and thorax white: legs white, slightly spotted with black.

Caterpillar dusky or rufous, with whitish lateral fascicles of hair, and eight loose dorsal tufts, the two anterior and three posterior of which are whitish, the rest rufous; the three anterior segments are thickly clothed with elongate fascicles directed forwards:—it feeds on the lime in June, and the imago appears in August: the pupa is greenish-blue, with a black spot on the thorax.

Of this very rare insect I have hitherto seen but five specimens, of which the collection at the British Museum, and those of Messrs. Haworth and Vigers contain one each, and a pair is in that of Mr. Swainson. Another specimen, I believe, was taken at Bromley, in Kent, in August 1827, and is in a collection at Birmingham.

Sp. 2. *Salicis*. *Alis albo-nitidis, radiis antennarum nigris, pedibusque atro annulatis*. (Exp. alar. ♂ 1 unc. 6—10 lin. ♀ 1 unc. 10 lin.—2 unc.)

Ph. Bo. *Salicis*. *Linné*.—*Don. i. pl. 30*.—*Leu. Salicis*. *Steph. Catal. No. 6013*.

Wings entirely of a rich glossy satiny-white: head, thorax, and abdomen of a clear snowy white: antennæ with the shaft white, the radii black: legs white, annulated with black. Female usually largest; the abdomen stouter, and less densely hairy.

Caterpillar dusky, spotted with red, with an interrupted series of white dots along the back; hair fulvous: it feeds on willows and poplars, and changes in June to a hairy pupa, within a loosely constructed cocoon; the imago appears in about ten or twelve days: the eggs are protected by a brittle silken substance.

Very abundant in certain seasons in the neighbourhood of London, committing great havoc amongst the poplars and willows; in plenty on the poplars near Chelsea, in July 1827, and in other parts during the past season.

With reference to the assembling propensity of the *Lep.-Pomeridiana*, an interesting notice is given in the Magazine of Natural History for November last, by Mr. Davies of Portsmouth, in which, amongst other facts, it is stated, that the writer, having bred some females of this species, had the windows of the room in which they were confined literally besieged by numberless males, anxious to obtain admittance to the objects of their desires.

GENUS LXVI.—PORTHESIA * *miki*.

Palpi very short, descending, slightly hairy, cylindric, triarticulate, the terminal joint exposed; the basal minute, about half as long as the terminal, the intermediate longest: *maxillæ* very short: *antennæ* short, especially in the females, acute, bipectinated in both sexes to the apex, the pectinations shortest in the females: *head* small, very pilose: *thorax* and *abdomen* somewhat robust and woolly: *wings* deflexed, subtrigonal, thickly clothed with scales: *legs* robust, short: *femora*, *tibiæ*, and *anterior tarsi*, densely fringed with elongate hairs. *Larva* with close fascicles of hair down the sides, rather longest on the neck, the back without tufts: *pupa* slightly hairy, acute, enclosed in a slight folliculus: *eggs* enveloped in down.

This genus, to which I have applied the name *Porthesia*, in allusion to the destructive habits of its larva, may be known from the two preceding by the opacity and texture of its wings, the stoutness and hairiness of its legs, the great bulk of the tuft at the apex of the abdomen in the males, and the downy mass in the females, the brevity of the antennæ, the minute basal joint of the palpi, and other less important characters. The larvæ also differ, and the eggs are enveloped in down.

Sp. 1. *chrysorrhœa*. *Niveus*, ano barbato ferrugineo, radiis antennarum luteo-fulvis. (Exp. alar. ♂ 1 unc. 3—7 lin. ♀ 1 unc. 7—10 lin.)

Ph. Bo. *chrysorrhœa*. *Linné*.—*Don*. i. pl. 10.—*Por. chrysorrhœa*. *Steph. Catal.* No. 6104.

Antennæ tawny-luteous, with the shaft white: *palpi* dusky-brown: *head*, *thorax*, and *wings* above snow-white, the latter with a dusky spot at the anal angle of the anterior, which spot is nearly, or quite obsolete, in the female, and sometimes nearly black in the male; the anterior wings beneath with a broad dusky cloud: *abdomen* white, with its apex bright tawny-luteous in both sexes.

The male has the base of the anterior wings frequently edged with black, and the anal spot composed of several smaller ones; and not unfrequently two or three dusky spots towards the base.

Πορθήσις, vastatio.

Caterpillar dusky, with a broad red band on the back, divided by a narrow black line, and white spots on the sides, with another red line beneath; it is gregarious and polyphagous, feeding on white and black thorn, elm, oak, fruit-trees, &c. in June; the pupa is dusky, and the imago appears at the end of July or beginning of August.

Very abundant in certain years, but of late it has been rather scarce near London: it occurs in various parts of the country. "Common at Bottisham."—*Rcv. L. Jenyns*. "Marton Lodge, Yorkshire."—*L. Rudd, Esq.* "Near York, and Newcastle-on-Tyne."—*W. C. Hewitson, Esq.* "Epping."—*Mr. H. Doubleday*.

Sp. 2. *auriflua* *. *Alis albis, radiis antennarum ferrugineis, abdomine barbato fulvo aut fusco.* (Exp. alar. ♂ 1 unc. 4—6 lin. ♀ 1 unc. 6—8 lin.)

Bo. *auriflua*. *Fabricius?*—*Ph. phæorrhæa*. *Don. x. pl. 555.*—*Por. auriflua*. *Steph. Catal. No. 6015.*

Wings above pure white; beneath with a narrow fuscous cloud on the costa of the anterior in the male, immaculate in the female: antennæ with the shaft white, the radii ferruginous: the abdomen white, the apex fulvous in the male, with the anal tuft brightest, dusky in the female, with the downy mass at the apex brown: head and thorax white.

Caterpillar dusky, with two red lines on the back, and an interrupted white streak on each side, with white lateral fascicles: it feeds gregariously on various plants, especially the white-thorn, and in some years its increase is enormous. In 1782, prayers † were ordered to be read in all the churches, to avert the supposed impending calamity, from the vast number of larvæ that abounded in that year, having despoiled so many trees of their foliage, and, it was feared, would extirpate the growing corn and grass. It changes to a dusky pupa, with paler rings: the imago appears in August.

Not very common of late years near London, but more frequent at Gravesend and Southend, where many specimens were captured during the past season. "Common near Bottisham."—*Rcv. L. Jenyns*. "Near York, and Newcastle-on-Tyne."—*W. C. Hewitson, Esq.*

* The names of this and the preceding insect have hitherto been confused by English writers, like those of *Thecla Pruni*, and *W. album*; the *true* *Pa. Pruni* of Linnè (of which a description will be given in my catalogue), not having been detected in Britain before July last: the reputed *Th. Pruni* (Vol. I. p. 77.) being the *Pa. W. album*, Hüb. and unknown to Linnè.

† In France these larvæ have so frequently appeared in such prodigious numbers, to the utter defoliation of the forests, as to induce the legislature to promulgate several ordonnances for their destruction.

GENUS LXVII.—HYPERCOMPA, *Hübner?*

Palpi very short, ascending, pilose, triarticulate, the terminal joint exposed; the basal joint tumid at the apex, as long as the second, terminal short, ovate: *maxillæ* considerably longer than the head. *Antennæ* simple, ciliated in both sexes: *heads* small, clothed with short, compact, hair: *thorax* and *abdomen* not very stout, covered with close short velvety pile: *wings* deflexed, densely squamous; the anterior elongate-trigonal: *legs* robust, squamose. *Larva* with fascicles of hairs down the sides: *pupa* smooth, with a spine at the apex, enclosed in a loose web on the ground.

Both sexes of *Hypercompa* are remarkable for having the antennæ simple and ciliated; and they may be known with facility from the other Arctiidæ by the elongation of their maxillæ, which are much longer than the head, and spirally, but irregularly twisted.

I am not certain whether this be the type of the *Hypercompæ* of Hübner; but the exquisite beauty of the insect well accords with the name.

Sp. 1. *Dominula*. *Alis anticis viridi-atris, maculis albo-flavescentibus, posticis rubris nigro-maculatis.* (Exp. alar. 2 unc. — 2 unc. 2 lin.)

Ph. No. *Dominula*. *Linné.*—*Don*. iv. pl. 171.—*Hy. Dominula*. *Steph. Catal.* No. 6016.

Antennæ, head, and thorax black, the latter tinged with green, with two ochraceous-yellow streaks; abdomen red above, with a black dorsal line, dark green beneath; anterior wings deep black, with a rich silken green gloss, with several cream-coloured or ochraceous spots of various magnitudes, and more or less confluent, three at the apex small: posterior wings cinnabar-red, spotted with black on the anterior and posterior margins: cilia black: both surfaces of the wings nearly similar. The size of the spots varies considerably.

Caterpillar hairy, black, with three yellow longitudinal linear and white spots: it feeds on the hounds-tongue, willow, ash, nettle, archangel, &c.; changes into a brown pupa, in a loose web, mixed with pieces of leaves on the ground: the imago appears in June.

This elegant species was formerly taken in considerable plenty in the lanes near Charlton and Blackheath, but of late it has become scarce near London: it, however, has occurred in plenty at Whitte-sea-mere, and in the New-forest. “Near York, once.”—*W. C. Hewitson, Esq.* “Long Parish and Amesbury.”—*Rev. G. T. Rudd.* “Not very uncommon in the neighbourhood of Bottisham and Cambridge.”—*Rev. L. Jenyns.* “Teignmouth, Devon, and Oxford.”—*Rev. W. T. Bree.* “Near Barnstaple, not uncommon.”—*W. Rad-don, Esq.*

GENUS LXVIII.—EUTHEMONIA * *miki*.

Palpi porrected, moderate, slightly hairy, triarticulate; the basal joint shorter than the second, the terminal rather slender: *maxillæ* short. *Antennæ* rather short, slender, bipectinated in the males, serrated in the females: *head* small, pilose: *thorax* and *abdomen* rather slender; the former hairy, the latter with a small tuft at the apex, and annulated: *wings* deflexed, densely squamous, trigonate: *legs* rather slender, the anterior with a compressed lobe on the inner edge, the posterior with spines at the apex: females smaller than males. *Larva* with short, closely set fascicles of hair: *pupa* rather elongate, with a spine at the apex.

Unless Euthemonia be divided from *Arctia*, the latter genus † should be restored to its artificial state, as left by Oechsenheimer, a retrograde movement which would tend rather to create error than to advance knowledge. The present genus differs very considerably from *Arctia* in its habit, and the proportions of the joints of the palpi are very dissimilar.

Sp. 1. *Russula*. *Alis luteis limbo sanguineo lunulæque fuscis, aut fulvis venis lunulæque rufis, posticis suprâ fuscâ marginali fuscâ.* (Exp. alar. ♂ 1 unc. 6—9 lin.: ♀ 1 unc. 4—5 lin.)

Ph. Bo. *Russula*. *Linne.*—Ey. *Russula*. *Curtis*, i. pl. 21.—Ar. *Russula*. *Steph-Catal.* No. 6017.

Male, with the thorax and anterior wings pale luteous, the costa towards the apex, the inner margin and cilia bright sanguineous, a fuscous lunulated spot in the middle more or less edged with sanguineous: posterior wings and abdomen yellowish-white, the former with a dusky lunate spot on the disc and a marginal fimbria of the same colour; cilia sanguineous: shaft of the antennæ and legs rufescent, radii of the former dusky. Female with the antennæ, head, thorax, and anterior wings, rufo-fulvous, the margins of the latter, nervures, and central lunule, bright sanguineous; the posterior wings fulvous, with the base, an ovate spot near the centre, and the margin, dull black: the abdomen black, with the edges of the segments pale fulvous. The marginal fascia in the posterior wings varies exceedingly; in some specimens it is nearly obliterated, in others interrupted by pale yellowish veins, and in some it forms a broad border, and the base of the wing is dusky.

Caterpillar dusky, with yellow lateral spots, and dull orange hair: it feeds on grasses, the plantain, scabious, hounds-tongue, &c.: changes in May to a reddish-brown pupa, in a web on the ground: the imago appears in June.

Far from uncommon on the warren and heathy places about Coombe-wood: the female, however, is rarely met with, owing to her sluggishness, and being generally concealed at the roots of plants:

* *Ευθήμεον*, *concinus*.

† *Eyprepia*, *Och.*, which embraces Euthemonia, and the five following genera, with *Eulepia* and *Deiopeia*.

also copiously in the New-forest. "In considerable plenty on Stockton-leath, and near York."—*W. C. Hewitson, Esq.* "Not uncommon in Bottisham and Horningsea-fens."—*Rev. L. Jenyns.* "Sutton-park and Coleshill-leath."—*Rev. W. T. Bree.*

GENUS LXIX.—ARCTIA * *Schrank.*

Palpi porrected, short, very hairy, triarticulate, the basal joint longer than the second, the terminal ovate, or cylindric: *maxillæ* short. *Antennæ* rather long, slender, bipectinated in the males, serrated in the females, the serrations and pectinations terminated by a fine bristle: *head* small, pilose: *thorax* stout, densely pilose: *abdomen* robust, tufted at the apex in both sexes, transversely streaked or spotted: *wings* deflexed, densely scaly, elongate-trigonal: *legs* short, *femora* very pilose: *anterior tibiæ* with a compressed lobe. *Larvæ* solitary, cylindric, thickly clothed with elongate fascicles of hair, each fascicle arising from a tubercle; when touched roll themselves into a ring: *pupa* rather elongate, with a spine at the apex, enclosed in a loose extended web; eggs naked, deposited with regularity.

The lively and brilliant colours of the *Arctiæ* offer a splendid contrast to the sober and chaste hues of most of the foregoing genera of *Arctiidæ*, of which family this genus appears to be the type. From the preceding and following genera this may be known by the robustness of its thorax and abdomen, and by the latter being transversely striped or longitudinally spotted: the basal joint of the palpi longer than the second, and the antennæ rather elongated. The species hereunder given appear to differ considerably from each other; but as they will not associate with any other genus, and I have not an opportunity of being acquainted with their habits, &c., it must be understood that they are merely placed in this genus provisionally, as being apparently their best location.

Sp. 1. Caja. *Alis anticis fuscis rivulis albis, posticis rubris maculis orbiculatis atro-caruleis nitidis.* (Exp. alar. ♂ 2 unc. 8—11 lin.: ♀ 2 unc. 9 lin.—3 unc.)

Ph. Bo. Caja. *Linne.*—*Don. i. pl. 15.*—*Ar. Caja. Steph. Catal. No. 6018.*

A highly beautiful insect: antennæ with the shaft white, the radii fuscous: head and thorax fuscous, the latter with a narrow ring anteriorly, and the apex posteriorly red: anterior wings fuscous, with numerous white irregularly waved strigæ: cilia brown, except at the anal angle, where they are white: posterior wings red, with the cilia flavescent, sometimes speckled with fuscous; with about seven small orbicular bluish-black spots, varying exceed-

* In restoring the name *Arctia* to this genus, I have adhered to the rule, which is with justice generally adopted, of employing that which has the claim of priority. Why *Ochsenheimer* should have rejected the term so aptly given by *Schrank*, I am at a loss to determine.

ingly in size and form, and delicately margined with fulvous: abdomen red, more or less transversely streaked with black.

Var. β . Anterior wings deep black, with bright cream-coloured strigæ: abdomen broadly fasciated with black.

Var. γ . Anterior wings with the basal half cream-coloured and immaculate, or with a few scattered brown spots, the apex as in var. α ; posterior with three or four bluish-black spots only.

Var. δ . Anterior wings cream-colour, with a few scattered brown spots; cilia ochraceous; posterior rufous, speckled with fulvous, with one small and two minute black spots, the latter nearly united, and resembling a colon; cilia yellowish.

Var. ϵ . Anterior wings as in var. α ; posterior and abdomen bright luteous, the latter broadly fasciated with black, the former with large bluish-black spots.

Var. ζ . Anterior wings brown, with pale flesh-coloured strigæ.

† Var. η . Anterior wings brown, with the hinder margin and strigæ white.

Var. θ . Anterior wings brown, with interrupted waved white strigæ; posterior with the spots united, and forming two transverse bands.

Var. ι . Anterior wings brown, with dusky strigæ, and a few irregular whitish spots: posterior blue-black, slightly rufescent on the inner margin.

† Var. κ . Anterior wings ochraceous, with interrupted whitish strigæ; posterior with small black spots.

The above are some of the more striking varieties of this protean species, scarcely two specimens of which agree precisely in colour and markings.

Caterpillars nearly black or brownish, with three elevated bluish tubercles on each segment laterally; hirsuties dusky-red; they feed on various plants, especially lettuces and chickweed: they are hatched in the autumn, and come forth in the spring, and change to pupæ in June, the moth appearing towards the end of July.

A very abundant species in the vicinity of London, and, I presume, throughout the chief part of England.

† Sp. 2. *Matronula*. *Alis anticis fuscis exterius flavo-maculatis, posticis flavis nigro sub-fasciatis*. (Exp. alar. 3 unc. 6 lin.)

Ph. Bo. *Matronula*. *Linné*.—*Turton* (!)—*Ar. Matronula*. *Steph. Catal. No.* 6029.

Larger than the preceding: anterior wings deep fuscous, with irregular, sometimes confluent, yellowish, or cream-coloured spots on the anterior margin, and a smaller one towards the anal angle: lower wings yellow or luteous, with two rows of interrupted black patches, disposed in bands: head and thorax fuscous, with sanguineous streaks, the latter with a lateral cream-coloured streak: abdomen sanguineous, with short transverse black fasciæ on the back. Caterpillar pale brown, with the tubercles on which the hairs are placed, and the legs rufescent; it feeds on the lime.

This remarkably elegant insect is marked as a native of Britain by Dr. Turton, but, I believe, without sufficient authority.

Sp. 3. Villica. *Alis anticis atris maculis flavicantibus, posticis flavis nigro-maculatis.* (Exp. alar. ♂ 2 unc. 1—1 lin.: ♀ 2 unc. 2—6 lin.)

Ph. Bo. Villica. *Linné.*—*Wilkes, pl. 37.* Ar. Villica. *Steph. Catal. No. 6020.*

Anterior wings black, with about eight yellowish spots of different magnitudes; a large spatulate one at the base, emarginate externally, followed by two suborbicular ones placed transversely, then two much smaller also transverse, followed by two considerably larger than the rest, and finally a suborbicular one in the hinder margin: posterior wings yellowish, or luteous, more or less

‡ Sp. 4. Hebe. *Alis anticis atris albo-fasciatis, posticis sanguineis atro-maculatis.* (Exp. alar. 2 unc. 1 lin.)

Ph. Bo. Hebe. *Linné.*—*Martyn?*—Ar. Hebe. *Steph. Catal. No. 6021.*

Anterior wings deep black, irregularly fasciated with white, the apical fascia united by a transverse white bar: posterior wings sanguineous, spotted or fasciated with black: head black, posteriorly sanguineous: thorax black, with a sanguineous ring anteriorly: abdomen sanguineous, with the apex and a dorsal line black.

Caterpillar black, with the hirsuties griseous on the back, and red on the sides and abdomen: it feeds on the millefoil, dandelion, and other plants.

A very conspicuous insect, which has been improperly mentioned as an indigenous species; though I am not aware of the origin of the report.

‡ Sp. 5. purpurea. *Alis anticis flavis fusco-punctatis, posticis rubris nigro-maculatis.* (Exp. alar. 2 unc. 2 lin.)

Ph. Bo. purpurea. *Linné.*—*Stewart (!)*—Ar. purpurea. *Steph. Catal. No. 6022.*

Head, thorax, and abdomen yellow, the latter with a streak of black spots on the back and sides: anterior wings also yellow, with various irregularly dispersed fuscous spots, the hinder margin immaculate: posterior wings red, irregularly spotted with black.

Caterpillar rough, cinereous, with whitish spots, the hirsuties fulvescent: it feeds on the currant; and the pupa is dark brown.

Stewart and Turton give this as a British species, but I apprehend without a proper investigation of the subject.

‡ Sp. 6. aulica. *Alis anticis griseis flavo-punctatis, posticis fulvis nigro-maculatis.* (Exp. alar. 1 unc. 8 lin.)

Ph. Bo. aulica. *Linné.*—*Martyn (!)*—Ar. aulica. *Steph. Catal. No. 6023.*

Head, thorax, and anterior wings griseous, the latter with various irregular yellow or whitish spots: posterior wings fulvous, irregularly maculated and banded with black: abdomen luteous, transversely fasciated with black.

Caterpillar with the six middle segments yellowish-white, the anterior and posterior dusky or griseous, the hirsuties flavescent: it feeds on the millefoil.

Martyn introduces this insect into his *Vade-Mecum*; but I have never seen an indigenous specimen, nor heard of one being captured: I therefore suspect that it is not British.

spotted with black, and an irregular black fascia at the apex: antennæ, head, and thorax black, the latter with a cream-coloured spot on each side: abdomen rufous, with a dorsal and lateral series of black spots.

Var. β . With the basal and two following spots on the anterior wings confluent.

Var. γ . With the basal and four following spots on the anterior wings confluent.

Var. δ . The apical spots on the anterior wings united.

The relative bulk of the respective spots on the anterior wings and their confluence varies considerably; and not unfrequently there are three or four small spots disposed in a band at the apex; the posterior wings are sometimes nearly immaculate, at others very thickly spotted, especially on the margin.

Caterpillar dusky, with blackish hairs, and fulvous tubercles; the head and legs red: it is polyphagous, but prefers chickweed: it is hatched in the autumn, and may be found in heathy places in the spring, while in quest of a situation to effect its change: the pupa is black: the imago appears towards the middle or end of June.

Not very common in the neighbourhood of London; but taken occasionally at Sydenham and Norwood; also at Birch, Darenth, and Coombe woods, Hertford, Ripley, &c. “Not uncommon near Southend and at Deal.”—*Rev. F. W. Hope*. “Suffolk.”—*W. C. Hewitson, Esq.* “Rare near Cambridge.”—*Rev. L. Jenyns*.

GENUS LXX.—NEMEOPHILA * *michi*.

Palpi extremely short, enveloped in the hairs of the front, triarticulate, the joints of nearly equal length, subglobose, the basal largest, the terminal smallest, and slightly compressed: *maxillæ* very short. *Antennæ* rather slightly bipectinated in the male, the pectinations shortening towards the apex, serrated and ciliated in the female: *head* small, very pilose: *thorax* and *abdomen* rather slender, the former with elongated hairs in the male, the latter stoutest and acute in the female, tufted at the apex in the male: *wings* deflexed, opaque, scaly: *legs* rather short: *anterior tibiæ* with a spine on the inside; posterior with spurs at the apex. *Larva* cylindric, slightly tuberculated, each tubercle producing a fascicle of hair: *pupa* with a truncate projection.

Nemeophila has the thorax and abdomen rather slender; the antennæ but slightly bipectinated in the males; the wings opaque and squamous; and the palpi extremely short, enveloped in the hairs of the head, with all the joints of nearly equal length, subglobose, the apical one somewhat compressed.

Sp. 1. *Plantaginis*. *Alis anticis atris rivulis flavis, posticis luteis margine maculisque nigris*. (Exp. alar. ♂ 1 unc. 6—8 lin.: ♀ 1 unc. 7—10 lin.)

* Νεμος nemus, φίλος amicus.

Ph. Bo. Plantaginis. *Linné*.—*Don*. iv. pl. 134.—*Ne*. Plantaginis. *Steph. Catal.* No. 6024.

Anterior wings black, with two yellow spots on the costa anteriorly, and a longitudinal fascia arising at the base, and terminating on the hinder margin in a large dentate cross of the same: the posterior wings yellowish, with irregular elongate black spots at the base, and the hinder margin with an interrupted black fascia: head and thorax black, the latter with two fulvous spots anteriorly, and two yellowish ones laterally, and longitudinally streaked with yellowish: abdomen fulvous, with the back black. Female without the yellowish lines on the thorax, the spots and streaks on the anterior wings of a deep fulvous: posterior wings with the base black, sometimes with a yellow spot in the centre, the margin luteous, irregularly spotted with black: abdomen rufous, with a black dorsal line.

Var. β . The anterior wings with the spots and streaks pure white.

Var. γ . All the wings white, marked with black, as in var. α .

Var. δ . Male with the posterior wings luteous, slightly streaked and spotted with black.

Var. ϵ . Female with the posterior wings rufous or scarlet, spotted with black.

As in the Arctiæ this insect varies exceedingly.

Caterpillar black, with the six middle segments rufescent: it feeds on the plantain, and lives throughout the winter, changing in April to a dark pupa: the imago appears in the beginning or middle of June.

Not uncommon in certain years in Darent-wood, which is the only locality that I have observed; the insect, however, is found in several other parts of the country. Var. γ was given to me by Mr. Dale, who took it in the north of England. "York and Westmoreland."—*W. C. Hewitson, Esq.* "Sutton-park."—*Rev. W. T. Bree*.

GENUS LXXI.—PHRAGMATOBIA * *mihi*.

Palpi short, very hairy, triarticulate, the basal joint the length of the second, and stouter; the terminal shortest, and ovate, obtuse: *maxillæ* rather spiral. *Antennæ* short, serrated, simple in the female, ciliated in both sexes: *head* very small, pilose: *thorax* stout, woolly: *abdomen* rather stout in both sexes, tufted at the apex in the males, acute and smooth in the females: *wings* deflexed, subdiaphanous; the anterior elongate, trigonate: *legs* stout: *anterior tibiæ* with a spine internally; two posterior pair with spurs at the apex. *Larva* very hairy: *pupa* with a slight spine, folliculated.

The abbreviated nearly simple antennæ in both sexes, robust thorax and abdomen, the latter spotted, and semi-transparent elongate triangular wings, well distinguish this genus; to these may be added

* *Περχυρος* *scpes*, *βίωω* *vivo*.

the characters of the palpi, which have the basal joint as long as the second, and stouter, with the terminal very short and ovate.

Sp. 1. *fuliginosa*. *Alis anticis rufo-fuliginosis, puncto gemino nigro, posticis rubris, maculis marginalibus nigris.* (Exp. alar. 10 lin.—1 unc. 6 lin.)

Ph. Bo. *fuliginosa*. *Linné.—Don. iii. pl. 80.—Phr. fuliginosa. Steph. Catul. No. 6025.*

Antennæ pale rufescent, with black radii: head and thorax dusky-red: abdomen cinnabar-red, with a streak of spots down the back, and another along each side: anterior wings like the thorax, with one or two minute black spots at the apex of the basal areolet, the cilia bright red: posterior wings fine bright red, with the margin and some scattered spots on the disc black, cilia bright red.

The posterior wings are frequently nearly immaculate, and occasionally nearly all black, with the inner margin alone red; at other times they have the margin alone dusky. The form of the wings differs materially. I possess a pair which have the anterior very much elongated and attenuated, forming a remarkable contrast to the usual appearance. Can they belong to different species? Harris figures the common kind in his Aurelian, and another, which he considers distinct, in his Exposition; and there is considerable diversity in the larvæ.

Caterpillar ferruginous, with the head and anterior legs black; or slate-colour, with the head cupreous: it is polyphagous, but prefers plantain, dock, and nettle; is found in June, and the imago appears in the beginning of July.

I have once or twice found the ferruginous larvæ of this insect near Ripley, and occasionally at Darenth-wood and near Hertford. "Near Dublin."—*Rev. J. Bulwer.* "West Moors, York, and Prestwick Carr, near Newcastle."—*W. C. Hewitson, Esq.* "Coles-hill."—*Rev. W. T. Bree.*

GENUS LXXII.—SPILOSOMA * *mih.*

Palpi short, a little descending, triarticulate, the two basal joints very hairy, the terminal scaly, the basal joint somewhat longer than the second, the apical rather small, oval, subconic: *maxillæ* short. *Antennæ* slightly bipectinated in the males, serrated in the females, each articulation with a bristle at the apex: *head* rather small, hairy: *thorax* and *abdomen* rather stout in both sexes, the latter slightly tufted in the male, acute in the female; *wings* trigonate, deflexed, opaque: *legs* moderately stout: *anterior tibiæ* short, with a spine internally; the four posterior with spurs at the apex. *Larva* slightly tuberculated, each tubercle producing a whisker of hairs: *pupa* obtuse, folliculated.

We again arrive at a group of insects in which the predominant colour is white; but, unlike the former group of the same hue, the

* Σπίλος; macula, σπμα corpus.

wings are more elongate, and are deeply speckled with black, and their bodies are spotted with the same colour, the spots being disposed in longitudinal lines. The species vary much, and some of the more remarkable varieties have been recorded as distinct species: their spotted bodies, combined with the opacity of their wings, exclusively of the structure of the palpi, &c. well distinguish them from the other Arctiidæ.

Sp. 1. *Menthastri*. *Alis albidis, aut pallidè ochraceis, punctis numerosis sparsis, lineolisque apicis atris.* (Exp. alar. ♂ 1 unc. 6—9 lin.: ♀ 1 unc. 6—11 lin.)

Bo. *Menthastri*. *Fabricius*.—*Don*. vi. pl. 189.—Sp. *Menthastri*. *Steph. Catal.* No. 6026.

Antennæ black: head and thorax white or ochraceous: abdomen luteous, with the tip snow-white, the back with one, and the sides with two lines of black dots: anterior wings whitish or ochraceous, irregularly spotted with black, with an oblique series of abbreviated black lineolæ: posterior wings white, with one or two black spots: legs black: the femora and tibiæ fringed externally with white hairs.

Var. β. With the spots on the anterior wings very minute and distant.

Var. γ. With the spots on the anterior wings large, and somewhat confluent.

Var. δ. As in var. γ; but the spots united into waving transverse strigæ.

Var. ε. PLATE 16. f. 3.—Anterior wings ochraceous, or white, with the base of the costa and edges of the nerves at the base of the wing black, the space between the nervures more or less filled in with black, the hinder margin sometimes spotted with black, at others immaculate: posterior wings more or less spotted with black.

† Var. ζ. *Curtis*, ii. pl. 92.—Pale buff-colour: anterior wings, with the costa and edges of the nervures towards the base, black, the spaces between the nerves on the posterior margin, and the margin itself, also black, with a few ochraceous spots on the fifth, sixth, and seventh areolets: posterior wings as in var. ε.

Caterpillar brown, faintly spotted with blue, with a yellowish dorsal line: it is polyphagous, but prefers nettle and fruit trees: it appears in the autumn, and changes in September to a reddish pupa, in a loose cocoon; and the imago appears in May.

Less common than *Sp. lubricipeda* near London, though not rare, except the varieties; whether the two last are truly referrible to the present insect I am not able to decide: var. ε seems to be not uncommon near Manchester; and Godart appears to give var. ζ as a variety of *Sp. Mentastri*. “Kimpton.”—*Rev. G. T. Rudd*. “Cambridgeshire, common.”—*Rev. L. Jenyns*. “York and Newcastle-on-Tyne.”—*W. C. Hewitson, Esq.* “Epping.”—*Mr. H. Doubleday*.

Sp. 2. Urticæ? *Alis albidis, anticis ferè immaculatis, posticis punctis tribus nigricantibus.* (Exp. alar. 1 unc. 7 lin.)

Bo. Urticæ. *Hübner?*—Sp. Urticæ? *Steph. Catal. No. 6027.*

Antennæ white, with dusky radii: head, thorax, and apex of the abdomen the same, middle of the latter slightly fulvescent, with a dorsal and two lateral streaks of black dots: anterior wings whitish, with a single minute black dot on the disc: posterior the same, with two dusky spots parallel with the hinder margin, and one larger and paler in the centre: legs white, the anterior, with the femora, fulvescent within, and the tibiæ with a narrow black streak: tarsi of all white.

This insect closely resembles the foregoing, if it be not a variety thereof: its chief distinction consists in the antennæ being white, the abdomen very slightly fulvescent, and in the greater purity of the white colour of the wings: it is the Bo. Urticæ of the Ent. Trans.; but whether the Bo. Urticæ of Hübner is referrible to this or to Sp. papyratia, which is of totally dissimilar form to the present, although somewhat similar in the colour of its antennæ, &c. I am unable to determine.

Of this species I have seen two specimens only a female, in the collection of Mr. Haworth, and a male in my own: the latter was taken on Epping-forest, many years since; Mr. Haworth's specimen in Yorkshire.

Sp. 3. Papyratia. *Alis albis, anticis punctis discoidalibus lineolâque punctorum nigrorum ad apicem nigris, posticis sæpissimè immaculatis.* (Exp. alar. 1 unc. 6—8 lin.)

Ph. Papyratia. *Marsham, Linn. Trans. i. pl. i. f. 4.*—Sp. Papyratia. *Steph. Catal. No. 6028.*

Antennæ white, with black radii: head, thorax, and tip of the abdomen clear white, middle of the latter bright orange, with the usual dorsal and lateral lines of spots: anterior wings white, with two or four black spots on the disc, and an oblique streak of black dots (varying in number, and sometimes obsolete) at the disc: posterior wings generally immaculate white, sometimes with a dusky speck in the centre, and one or two obsolete ones near the margin.

Wings sometimes totally immaculate.

Caterpillar deep brown, with a few black spots: it feeds on various aquatic plants, especially the water-mint, white ladies bed-straw, &c. and is found in the autumn: the pupa is dusky, and changes about the middle of June to the imago.

Not common; but taken occasionally in the larva state in the marshy places near London; especially near the banks of the Croydon Canal, in the Isle of Dogs, Plaistow, and Hackney-marshes, &c.

Sp. 4. *lubricepeda*. *Alis flavescentibus strigâ obliquâ fractâ punctorum atro-rum, thorace anoque luteis*. (Exp. alar. ♂ 1 unc. 6—9 lin.: ♀ 1 unc. 8—10 lin.)

Ph. Bo. *lubricepeda*. *Linné. Don. xvi. pl. 568*.—Sp. *lubricepeda*. *Steph. Catal. No. 6029*.

Antennæ black: male with the head, thorax, and abdomen pale buff colour, the latter with one dorsal and two lateral lines of black dots: anterior wings yellowish or buff-colour, with a slight transverse band of black spots near the base, an oblique interrupted striga from the apex to the inner margin, where it becomes rather expanded, three or four black dots on the hinder margin, and a few on the centre of the costa: posterior wings rather paler, with a few black spots. Female pale or whitish, with the spots on the wings somewhat obsolete.

Var. β. Wings reddish buff, with the margins and cilia deep sanguineous, the markings as usual.

Both the colour and markings of this species vary exceedingly: in some specimens the former is of a rich orange-buff, in others paler, and some whitish; the strigæ and dots are sometimes nearly obliterated, at others they are so broad and deeply marked as to become fasciæ: occasionally the oblique striga ceases a little beyond the middle, and becomes incurved towards the costa: the posterior wings are sometimes immaculate, at others they have a central waved transverse striga of interrupted dots, and several marginal spots.

Caterpillar greenish, with pale fulvous hairs: it feeds on various herbaceous plants, in the autumn, and in June the imago appears.

A very common insect, I believe, throughout England, frequenting gardens and shrubberies, even in the centre of the metropolis itself. “York and Newcastle.”—*W. C. Hewitson, Esq.* “Kimpton.”—*Rev. G. T. Rudd*. “Cambridgeshire, common.” *Rev. L. Jenyns*.

† Sp. 5. *radiata*. “*Alis anticis nigris maculâ magnâ lobatâ variisque flavicantibus*.”—*Haw. Ent. Trans.*

Be. *radiatus*. *Haworth*.—Sp. *radiatus*. *Steph. Catal. No. 6030*.

Anterior wings black, with a large lobate spot, and the nervures yellowish.

I regret not having it in my power to give a more detailed account of this species at present, but I hope in my Appendix to make amends for the omission.

I have seen one specimen only of this species, which somewhat resembles var. ζ of Sp. *Menthastri*: it is in Mr. Haworth's cabinet, and was taken in Yorkshire.

GENUS LXXIII.—DIAPHORA* *mihi*.

Palpi moderate, descending, triarticulate, the two basal joints very hairy, the terminal squamous, all of nearly equal length, cylindric, the basal one in-

* *Diaphora* differentia.

curved, the terminal more slender than the others, obtuse: *maxillæ* rather longer than the head. *Antennæ* bipectinated in the males, serrated in the females, the pectinations incurved, and meeting at the apex: *head* very small, woolly: *thorax* stout, very woolly: *abdomen* slender in the male, robust and slightly acute in the female: *wings* subdiaphanous, deflexed, trigonate: *legs* short, stout; the *anterior tibiæ* short, with a spine on the inside, the posterior with spurs at the apex. *Larva* tuberculated, each tubercle producing a tuft of hairs: *pupa* acute, folliculated.

The sexes of this genus differ considerably from each other, but in each the wings are rather abbreviated (especially in the males), and but sparingly covered with scales: the thorax of both sexes, and the femora and posterior tibiæ of the male, are very woolly, and the palpi have the terminal joint as long as either of the others, and cylindric.

Sp. 1. mendica. *Alis maris cinereis, fæminæ albis, utroque atro punctatis.* (Exp. alar. ♂ 1 unc. 2—4 lin.: ♀ 1 unc. 4—6 lin.)

Ph. Bo. mendica. *Linné. Linn. Trans. i. pl. 1. f. 3.—Dia. mendica. Steph. Catal. No. 6031.*

Male with the antennæ black: thorax and abdomen ashy-brown; the latter with obsolete black spots: wings fuscous; the anterior with six or eight scattered black spots, the hinder margin immaculate; posterior with three or four dusky ones towards the hinder margin, and a larger one on the disc. Female very dissimilar: antennæ black: head and thorax snow-white; abdomen grayish-white, with five rows of dusky spots, one dorsal, the others lateral; wings white, more or less spotted with black; the posterior generally with some larger spots near the hinder margin; the hinder margin of the anterior rarely spotted.

The maculations on the wings vary considerably: I possess one specimen with two minute dots only on the anterior wings, and one on the posterior; others with about fourteen on the anterior and ten on the posterior wings; and all intermediate grades, some with the cilia of the anterior wings also spotted.

Caterpillar cinereous; it feeds on various aquatic plants, in the autumn, and the imago is produced about the middle of May.

Not very uncommon in several places near London, especially in the marshy places near Dartford, Erith, &c. I once took a fine specimen, which had been impaled by a shrike on a whitethorn bush, in Epping forest. “Norwich.”—*W. C. Hewitson, Esq.* “Epping.”—*Mr. H. Doubleday.* “Marton Lodge, Yorks.”—*Rev. G. T. Rudd.*

GENUS LXXIV.—PENTHOPHERA, *German.*

Palpi small, nearly concealed by hairs, porrect, biarticulate, the terminal joint very large, ovate, subacute: *maxilla* obsolete. *Antennæ* deeply bipectinated

in the males, the pectinations long and slender, each terminated by three or four fine rigid hairs: simple in the female: *head* small, pilose: *thorax* robust in the males, smaller in the females: *abdomen* short in the males, subacute in the females: *wings* subdiaphanous, rounded in the males, small and lunulate in the females: *legs* slender; the anterior tibiæ with a spine internally, the four posterior with spurs at the tip. *Larva* tuberculated, each tubercle producing a fascicle of hairs.

The want of maxillæ distinguishes this genus from the preceding, Phragmatobia and Nudaria, with which it agrees in the texture and transparency of its wings, as well as from Spilosoma, and the foregoing genera, which have densely squamous wings. From Psyche and Fumea, the robustness of its body, and differently constructed wings and antennæ, well distinguish the males, and the females are known by having wings, which, however, are abbreviated, and thus approach towards the apterous ones of the following genera.

† Sp. 2. nigricans. *Fusco-nigra tinctura flavedinis, ciliis neurisque saturationibus, abdomine subtilis tarsisque argenteo micantibus.* (Exp. alar. 1 unc. 2 lin.)

Pe. nigricans. *Curtis*, v. pl. 213. *Steph. Catal. No. 6033.*

“Male semitransparent, hairy, brownish-black with a yellowish tint; cilia and nervures darker, the former very short, superior (anterior) wings rather long and narrow: thorax and abdomen woolly, the latter beneath at the apex, and the tarsi silvery. Female unknown.”—*Curtis*, l. c.

This insect I have never seen: the figure above referred to appears to differ sufficiently from that of *P. Morio* to constitute a distinct species.

Taken by Mr. Dale, in June, 1824; West Parley coppice, Dorset.

GENUS LXXV.—PSYCHE, *Schrank.*

Palpi and *maxillæ* wanting, a minute loose tuft of hair occupying their place. *Antennæ* of the male rather short, bipectinated, the pectinations twisted, and very pilose; of the females very short, simple submoniliform, the two basal joints very large and robust, the rest small: *head* and *thorax* scarcely pilose,

† Sp. 1. Rubea. *Alis pallidè rufescentibus, puncto medio albido, fasciâ strigâque posticâ nigris.*

Bo. Rubea. *Fabric.* *Samouelle* (!)—Pe. Rubea. *Steph. Catal. No. 6032.*

All the wings pale rufescent, with a whitish dot in the middle, and a black fascia and posterior striga.

Caterpillar yellow, with two dusky stripes and some black dots anteriorly: it feeds on the oak: pupa brown, slightly hairy.

Introduced as British in *Samouelle's Compendium*, but evidently without any authority.

shining; *abdomen* of the males somewhat robust, densely pilose; of the females naked, rather glossy above, with a woolly mass at the apex, the *ovipositor* exerted, subtruncate: *wings* elongate, rounded posteriorly, very transparent, slightly hairy; wanting in the females: *cilia* moderate: *legs* slender, transparent, scarcely pilose; *posterior tarsi* with very short spurs at the apex. *Larva* enclosed in a case, composed of bits of leaves, &c. in which it changes to an elongate *pupa*.

This curious genus and *Fumea* are remarkable for the singularity of their habits, and ought possibly to constitute a family by themselves, rather than be associated with the *Arctiidae*; but, unless that family be considerably dismembered, no great advantage would arise from their separation, and their present location is unquestionably not far from their natural position, as pointed out by the genera *Penthephora* and *Nudaria*, which have evidently considerable affinity in their perfect states, the former genus being destitute of maxillæ, with semitransparent and almost scaleless wings (abbreviated in the females of some of the species), and *Nudaria* resembling them in the texture of the latter organs, and in their want of scales. Dr. Horsfield places them with the *Hepialidae*, to which he unites them by means of the singular genus *Oiketico*, of Guiling; but, although the larvæ may indicate the affinity, the imago is more allied to the *Arctiidae*; but these affinities may be readily comprehended by the diagram to which I have before alluded, and which clearly shows that it is impossible to define the absolute line of demarcation in the larger groups, and that, although writers necessarily differ in the linear arrangements, such differences are more apparent than real.

Sp. 1. fusca. PLATE 18. f. 3 ♂ f. 4 ♀. *Alis pallidè fuscis, concoloribus, immaculatis, abdomine dilutè cinerascete.* (Exp. alar. ♂ 8—9½ lin. ♀ aptera, long. corp. 2—2½ lin.)

Nu. fusca. Haworth.—Ps. fusca. *Steph. Catal. No. 6034.*

Male with the antennæ dusky-brown: the thorax grayish-black; the abdomen pale cinereous, with an ochraceous tinge: wings very transparent, all pale cinereous-brown, immaculate: legs and under side of the thorax and abdomen pale ochraceous ash. Female apterous, with the head and thorax very glossy dusky-brown; the abdomen dusky, and rather shining on the back, the sides cinerascet: legs pale transparent ashy-colour.

“ I first took the larvæ in Hornsey-wood, in the summer of 1820, and reared two males; after several unsuccessful seasons, I again met with them and the pupa on 22d June and 4th July, 1827, in great abundance, on the leaves of the hazel and willow, and on the leaves and trunks of young oaks, from which I bred only three males, nearly all the larvæ being infected with ichneumons.

"Again in June last I procured another considerable supply of both larvæ and pupæ, some only half the size of the others, from the largest of which I obtained four males and two females, in the beginning of July; the larvæ on the smaller cases being still alive (Nov. 24.); from which I conceive that they remain at least two seasons, if not more, before they attain perfection*: which opinion is strengthened by the fact of my taking the young larvæ† on 17th July, 1827, under three-fourths of a line in length, including the case, which are now but four lines long, and which I fed at first on the leaves of the willow, the cuticle of which they devoured, and with the downy portion they formed their cases; during the winter they remained fixed to the upper part of the inverted glass in which they were placed (having made the sides easy of ascent, by covering them with a fine silken web); and in March they began to stir, when I supplied them with the buds of white-thorn and afterwards with willow; they gradually increased the size of their cases, and added to them fine saw-dust and pieces of leaves; and after a few weeks they again became immovably fixed, and from each of them the Chalcideous insects alluded to in the note were produced; and their extremely slow growth not only indicates their anomalous longevity, but satisfactorily shows why they are so obnoxious to the attacks of parasites. The females never leave their cases; and from previous ignorance of that fact, I am not confident whether any of the larvæ taken in June 1827 produced any of that sex."—*Mr. Ingpen*.
How the union of the sexes takes place it is difficult to imagine, as the female does not leave her birthplace, and the extraordinary smallness of the latter sex is very remarkable.

For the above interesting facts I am indebted to my friend Mr. Ingpen, who has also taken the insects at Highgate: specimens were also taken, many years previously, by Messrs. Hatchett and Bydder, I believe in or near the same locality.

GENUS LXXXVI.—FUMEA, *Haworth*.

Palpi and *maxillæ* wanting, their place occupied by a tuft of elongate hairs. *Antennæ* of the male elongate, bipectinated, the pectinations subclavate, ciliated, and straight; of the female very short, simple, the two basal joints largest; *head* pilose anteriorly: *thorax* slightly hairy, and generally glossy: *abdomen* of the male pilose, with a tuft at the apex, of the female more robust, with a woolly mass at the tip: *wings* incumbent, of the male diaphanous, deeply ciliated, pilose, of the female wanting: *legs* rather stout, the *posterior*

* Thereby approaching in the duration of their lives to some of the Hepialidæ.
—*J. F. S.*

† "Which larvæ, although taken so young, produced a great abundance of Chalcideous parasites in June last; the eggs of which must either have been deposited in the young larvæ upon leaving the egg, or in the latter, if not introduced upon the leaves upon which they were nourished."—*Mr. Ingpen*.

tibiæ very pilose, with elongate spurs at the apex. *Larva* enclosed in a case, in which it changes to *pupa*.

Like the preceding genus, the males of this have the antennæ pectinated; but the pectinations, instead of being incurved, are straight, subclavate, and ciliated; the wings are very transparent, abbreviated, pilose, and strongly ciliated; the females are wingless; and both sexes appear to be destitute of trophi, a broad tuft of hairs alone occupying their place.

Sp. 1. *nitidella*. *Alis subelongatis, fusco-nitidis, marginibus cinerascens*. (Exp. alar. $5-5\frac{1}{2}$ lin.)

Ti. *nitidella*. *Hübner*.—Fu. *nitidella*. *Steph. Catal. No. 6035*.

Wings entirely of a bright shining fuscous, with the margins cinerascens; the anterior a little elongate, the posterior rounded: antennæ and legs gray-brown; abdomen dusky. Female ochraceous-ash, with the head chestnut-brown, some grayish spots on the thorax, and the apex of the abdomen woolly. Caterpillar rufescent or yellowish, with the head castaneous, and a line of the same colour on the three first segments; the case is formed of bits of grass and leaves: the pupa of the male is slender, and brown; the female stouter and brownish-yellow.

Of this species I possess a pair, taken by myself, in the lane leading to Darent-wood from the village, in July.

Sp. 2. *pulla*. *Alis rotundatis atris immaculatis, undique margine piloso cinctis, antennis parum pectinatis*. (Exp. alar. 5 lin.)

Bo. *pulla*. *Esper*.—Fu. *pulla*. *Steph. Catal. No. 6036*.

Antennæ dusky, rather slightly pectinated; head, thorax, and abdomen deep black, the latter brownish at the sides and apex, and the former very hairy: wings rounded, very pilose, deep immaculate brown, with the anterior margin pilose, and the cilia rather elongate.

My specimen of this very distinct species was caught by myself in June, in the lane leading into Darent-wood from Greenhithe: it appears to be scarce.

Sp. 3. *muscella*. *Alis oblongiusculis obscure hyalinis, corpore atro hirsuto, antennis valde pectinatis*. (Exp. alar. $5\frac{1}{2}-6$ lin.)

Bo. *muscella*. *Fabricius*.—Fu. *muscella*. *Steph. Catal. No. 6037*.

Antennæ dusky-black, deeply pectinated: head, thorax, and abdomen black and hairy, the sides of the latter paler: wings slightly oblong, obscurely hyaline, of a deep immaculate black, with the margins darker, the fringe long and dusky-black.

Found in grassy places amongst furze: I have seen many and captured several on Hertford-heath in June, and it has also been taken in Epping Forest and Dartford-heath.

Sp. 4. *Bombycella*? *Alis rotundatis obscure hyalinis lividis, fusco irroratis.*
(Exp. alar. 6—6½ lin.)

Ti. *Bombycella*? *Hübner*.—Fu. *Bombycella*. *Steph. Catal. No. 6038.*

Antennæ with the shaft yellowish, the radii dusky-brown: front hairy, slightly ochraceous: thorax and abdomen dusky: wings rounded, obscurely transparent, of a livid brown, with darker fuscous spots, the margin rather dusky, with a deep yellowish-gray fringe.

Apparently very rare: I have two specimens, one of which I obtained from Mr. Marsham's collection, the other from a dealer. Mr. Haworth has specimens of his own taking.

Sp. 5. *pectinella*. *Alis rotundatis cinereo-fuscis, hyalinis, immaculatis, margine brunneo.* (Exp. alar. 6 lin.)

Bo. *pectinella*. *Fabricius*.—Fu. *pectinella*. *Steph. Catal. No. 6039.*

Antennæ dusky-brown, with the radii palest: front hairy and dusky: thorax and abdomen fuscous: wings rounded, immaculate, transparent ashy-brown, with a narrow darker margin, the nervures dusky, fringe yellowish-gray.

Also rare. I possess one specimen, which I obtained from Mr. Francillon's collection. Mr. Haworth has one, which he purchased of a dealer.

GENUS LXXVII.—NUDARIA, *Haworth*.

Palpi minute, curved upwards, squamous, triarticulate, the two basal joints of equal length, the terminal minute, cylindric: *maxillæ* longer than the head. *Antennæ* simple in both sexes, ciliated beneath in the males; the basal joint robust, elongate, with a dense hairy tuft: *head* with a dense fascicle of hairs between the antennæ: *thorax* not crested: *abdomen* pilose, slender in the males, with a tuft at the apex, more robust in the females, the tip rather conical: *wings* slightly deflexed, more or less elongate, rounded posteriorly, diaphanous, pilose: *legs* rather slender, naked, the two posterior joints with spurs at the tip. *Larva* exposed, hairy; *pupa* obtuse.

Nudaria has the wings remarkably transparent, and may be known from the rest of the *Arctiidæ* (except *Hypercompa*) by the length of its *maxillæ*, which considerably exceeds that of the head: the antennæ are simple in both sexes, with the basal joint remarkably large and ovate, and the palpi are minute and squamous: their flight is nocturnal.

Sp. 1. *mundana*. *Alis subhyalinis, lutescente-albidis strigis duabus undatis punctoque medio fuscis.* (Exp. alar. 9—11 lin.)

Ph. At. *mundana*. *Linné*.—Nu. *mundana*. *Steph. Catal. No. 6040.*

Antennæ ochraceous-brown; head, thorax, and abdomen woolly grayish-white: the anterior wings lutescent-white, with two undulated fuscous strigæ, one

towards the base, the other behind the middle, with a round fuscous spot between, towards the costa; posterior wings immaculate.

Var. β . With a fuscous cloud at the base of the anterior wings, on the costa; and a denticulated striga on the hinder margin.

Caterpillar hairy, brown; it feeds upon lichens: pupa brown, with the abdomen greenish, speckled with black: the imago appears in August, and frequents hedges.

Not uncommon in several places near London; in great plenty near Ripley, and also at Darenth-wood near Hertford. "Alderly, Cheshire."—*Rev. C. Stanley*. "Sundridge, Kent, in July, 1825."—*Mr. Inghen*.

Sp. 2. Hemerobia. *Alis hyalinis, immaculatis, limbo squamoso ciliisque lutescentibus*. (Exp. alar. 6—10 lin.)

Bo. Hemerobia. *Hübner*.—Nu. Hemerobia. *Steph. Catal. No. 6041*.

Distinguished by the transparency of its wings, which are beautifully iridescent: immaculate, with the nervures slightly tinged with ochraceous, the entire margin squamous, and with the fringe lutescent or yellowish.

Were it not that I have frequently reared this insect from the larva, I should be induced to think, with Ochsenheimer, that it was a mere wasted example of the foregoing species; but on first emerging from the pupa, the wings have been perfectly transparent and immaculate.

Taken occasionally at Darenth-wood at the end of July.

Sp. 3. senex. PLATE 18. f. 2. *Alis rotundatis, sordide lutescentibus, anticis maculâ mediâ punctulisque fuscis perparcè notatis, posticis puncto medio fusco*. (Exp. alar. 8—9 lin.)

Bo. senex. *Hübner*.—Nu. senex. *Steph. Catal. No. 6042*.

Antennæ, head, thorax, abdomen and legs pale ochraceous, or cinerascens: wings rounded, anterior lutescent, with a round dusky spot a little beyond the middle, various minute brown spots on the nervures towards the base, disposed in a striga, and between the larger spots and the margin a series of elongate spots or lineolæ also on the nervures; the tip of the wing a little clouded with dusky, the cilia flavescent, with dusky spots: posterior wings rather paler, with some obsolete spots towards the margin, and a larger central lunate one: cilia flavescent, obsoletely spotted with dusky. There is sometimes a dusky patch at the base of the anterior wings, and the costa is clouded with the same colour.

Very scarce near London; two or three specimens, of which I possess one, have been taken in Battersea-fields; but on the borders of Whittlesea Mere the insect occurred in considerable plenty in July 1825, and the following season.

GENUS LXXVIII. HETEROGENEA, *Knoch*.

Palpi minute, densely clothed with scales, triarticulate, the second joint longest, the last minute: *maxillæ* wanting: *Antennæ* of the female simple, slightly

pubescent at the tip, with a small tuft of hairs at the end: *head* slightly hairy; *thorax* and *abdomen* scaly: *wings* opaque, scaly: *anterior* subtriangular, acute, *posterior* suborbiculate; *legs* rather slender, *posterior tibiæ* short, robust, with rather long spurs at the apex. *Larva* ovate, without legs, naked, depressed: *pupa* folliculated.

Heterogenea differs in the imago state from *Limacodes* by the form of its anterior wings, which are trigonate and somewhat truncated posteriorly; the thorax and abdomen are rather slender, and the antennæ, at least in the female (the only sex I possess, or have had an opportunity of examining), are more slender than in that sex of *Limacodes*: the palpi are very minute.

Sp. 1. Asellus. PLATE 17. f. 2. *Alis luteo fusciscentibus, posticis saturatioribus* (Exp. alar. 6—9 lin.)

Hep. Asellus. *Fabricius*.—He. Asellus. *Steph. Catal. No.* 6043.

Antennæ, head, thorax and abdomen pale luteous, tinged with ferruginous; anterior wings immaculate glossy, lutescent brown; the cilia dusky: posterior fuscous, slightly tinted with luteous, with dusky cilia.

Caterpillar ovate, red, with a yellow dorsal line, spotted with black, the sides green: it feeds on the poplar: the pupa brown, folliculated.

Of this insect I have seen but five examples, in different cabinets; all but one of which were captured in the New Forest, near Lyndhurst. “Kimpton.”—*Rev. G. T. Rudd.*

GENUS LXXIX.—LIMACODES, *Latreille*.

Palpi short, a little ascending, densely clothed with scales and short hairs, tri-articulate, basal joint short, second as long as the other two, robust, sub-cylindric, terminal, the length of the first, slender, subfusiform, slightly acute: *maxillæ* obsolete. *Antennæ* simple, of the male stout, compressed, rather serrated, pilose at the apex, of the females slender, a little serrated towards the apex, which is acute: *head* moderate, very hairy: *thorax* stout: *abdomen* slightly robust, a little tufted in both sexes at the apex, rather stoutest in the females: *wings* opaque, deflexed; *anterior* elongate, subtrigonate, posterior margins rounded: *legs* very stout, short; *femora* and *tibiæ* with a broad fringe of hairs; *anterior tibiæ* simple, four posterior, with spurs at the apex. *Larva* very stout, naked, limaciform, gibbous above, flat beneath, apodous: *pupa* robust, obtuse, posteriorly acute; enclosed in a dense ovate folliculus.

Limacodes and the preceding genus differ in their metamorphoses from the other Arctiidæ; but, in their final state, their resemblance is certainly greater to the insects of that family than to the Bombycidæ; amongst which, or rather in the group containing

the genus *Saturnia*, Dr. Horsfield is inclined to place them, from the consideration of their larvæ: but as my limits will not permit me to discuss the point here, I must refer to the introduction to my Catalogue for my ideas respecting their location. The present genus differs from *Heterogenea* at first sight by the stoutness of its thorax and abdomen, the elongation and rotundity of its anterior wings, and the robustness of its antennæ; the proportions and comparative bulk of the palpi, and other less evident characters.

Sp. 1. *Testudo*. *Alis fulvis, aut ferrugineis, strigis duabus obliquis obscurioribus.* (Exp. alar. ♂ 8—11 lin.: ♀ 10 lin.—1 unc. 4 lin.)

Hep. *Testudo*. *Fabricius*.—Ph. *Testudo*. *Wilkes*, pl. 88.—Li. *Testudo*. *Steph. Catal. No. 6044.*

Anterior wings deep fulvous, clouded with dusky, with an oblique dusky stria, reaching from near the base of the inner margin to about the middle of the costa, and another extending from the costa, a little behind the middle, nearly to the anal angle; cilia dusky: posterior dusky-black, sometimes fulvescent on the inner margin; cilia dusky-fulvous, deepest at the base. Female with the anterior wings deep unclouded tawny, and slightly ferruginous, with the cilia concolorous; posterior fulvous, thickly irrorated with dusky; cilia pale tawny: markings of the anterior wings as in the male.

This insect varies much; in some cases the males have the anterior wings clouded with large patches of fulvous, and others nearly immaculate: the females have the posterior wings occasionally nearly fuscous:—both sexes have frequently the rudiments of a second striga parallel with the usual basal one.

Caterpillar green, with two whitish dorsal lines: it feeds on the oak; and is to be found at the beginning of September: the imago appears towards the end of June.

In certain seasons this insect is taken in tolerable plenty at Darent-wood; and I have captured as many as a dozen males in one day, while flying amongst the underwood, a little after noon; but, on the whole, the insect may be esteemed rare. It not only occurs in that neighbourhood, but at Birch Wood, the woods near Chisselhurst and Sydenham; and it has likewise been taken within this twelvemonth near Ipswich.

LEPIDOPTERA NOCTURNA.

By which term, as being the typical group, I shall include such insects only as possess the following characters:

Palpi two, most frequently compressed; the second joint usually large; the terminal short: *maxillæ* in general elongate, rarely abbreviated; never

wanting: *antennæ* simple, occasionally pectinated, but mostly ciliated in the males, rarely serrated: *head* not very small: *thorax* stout, very frequently crested: *body* moderately stout, the apex of the males tufted: *wings* subtrigonal, generally deflexed, rarely convoluted, sometimes horizontal or incumbent, undivided. Larva generally with sixteen feet, rarely fourteen, the anal ones never deficient: pupa generally subterranean.

The almost insurmountable difficulties that present themselves, at nearly every step, in our endeavours to detect the characters of Lepidopterous insects, are in no place more evident than amongst the insects of this subdivision, owing to their great similitude, and the obscurity of their characters; the trophi, which are such important organs in other orders, being more or less enveloped in scales or hair. We must therefore select our characters from external differences of outline, colour, and texture; as also from the structure of the antennæ, the disposition of the wings, &c. during repose, and as far as practicable from the metamorphoses and economy: but, with all these aids, the insects approximate so closely, that, notwithstanding the diversified materials of which the Nocturna are manifestly composed, it is utterly impossible to frame characters for the various genera, that shall include every species truly belonging to each respectively, and exclude such as do not.

If the metamorphosis be taken as a primary guide in the subdivision of the Lepidoptera into families, we must doubtless consider the indigenous Nocturna as composed of several; the first of which has a larva attenuated at each end, and more or less hairy, with sixteen legs: the second a cylindrical larva, generally naked, but sometimes thickly clothed with hair, and always having sixteen legs; the third of such insects as have a naked larva with fourteen legs; and a fourth of such as have a larva with sixteen legs, but the two anterior abdominal ones evidently shortest, the body naked, ciliated laterally, and frequently having two prominences on the anal segment; though, as the perfect insects resemble each other so greatly, and their characters are manifestly not only excessively obscure, but have not been examined with sufficient accuracy to the requisite extent, I shall merely subdivide the present group into the two following families, which appear to be sufficiently distinct.

<i>Alæ</i>	{	valdè elongatæ; sæpissimè convolutæ: <i>palpi</i> cylindrici: .	1. LITHOSIIDÆ.
		vix elongatæ; haud convolutæ: <i>palpi</i> subcompressi: .	2. NOCTUIDÆ.

FAMILY I.—LITHOSIIDÆ *miki*.

Antennæ moderate, very slender, setaceous, sometimes pectinated or ciliated in the males: *palpi* not longer than the head, cylindric, terminal joint as short as, or shorter than, the second: *maxillæ* generally longer than the head: *wings* horizontal, somewhat elliptic, the posterior much folded, the anterior without stigmata: *thorax* not crested: *body* slender. Larva fusiform, sometimes hairy, with sixteen legs, solitary, either residing in a common web, or subcutaneous: pupa generally folliculated.

The insects comprised in this family were arranged by Linné either amongst the Tineæ, Bombyces, or Noctuæ; and the accuracy of such arrangement evidently accords with nature, as it appears to me that their resemblance in certain particulars with the three groups results entirely from the station they apparently occupy in the scale of creation, and which the system of Mr. MacLeay so beautifully illustrates. Callimorpha is doubtless allied to the Arctiidæ, through the medium of Hypercompa; Eulepia and Deiopeia to the Tineidæ, and the remaining genera to the Noctuidæ: but I conceive that the affinity of the three genera here named is not sufficiently close to warrant their being placed in either of the three families alluded to, but that all agree sufficiently with each other, and moreover have so many characters in common with the Noctuidæ, as to justify their union as a family among the Nocturna.

As in the Nocturna generally, the Lithosiidæ repose during the day on trunks of trees or amongst their branches, and fly in the twilight and darkness.

Their larvæ are unquestionably unlike those of the Tineidæ, but strongly resemble those of the Arctiidæ and of many groups of Noctuidæ; being cylindric, with each extremity slightly attenuated, frequently clothed with elongate hairs, placed in tufts, and having sixteen feet, placed as in the above families; they are solitary and exposed, and do not live gregariously in a web, or subcutaneously, like those of the Tineidæ.

I shall divide the indigenous species into the following genera, thus briefly characterized:

<i>Alæ antice</i>	{ oblongæ, subelliptico- truncatæ : <i>Palpi</i>	{ 3-articulati : <i>Maxilla</i>	{ vix capite longiores : .	31. EULEPIA.	
	{ subtrigonæ, haud subtruncatæ : <i>Palpi</i> 3-articulati ; articulo 3tio	{ 2-articulati :	{ capite multò longiores : <i>Alæ posticæ</i>	{ subdia- phanæ : .	32. DETOPEIA.
{ 2-do multò breviori : .	33. LITHOSIA.				
		{ 2-do subæquali : .	30. CALLIMORPHA.		
{ 2-do multò breviori : .	35. SETINA.				
		{ 2-do subæquali : .	30. CALLIMORPHA.		

GENUS LXXX.—CALLIMORPHA, *Latreille*.

Palpi short, a little descending, or horizontally porrected, slightly hairy, triarticulate, the basal joint elongate-ovate, as long as the two following, which are of equal length, and subovate or attenuated, with the terminal one acute: *maxillæ* longer than the head. *Antennæ* setaceous, slightly ciliated in the males; *head* small, rather hairy in front: *thorax* and *abdomen* clothed with silken scales; the latter somewhat robust in the female, slightly tufted in the males: *wings* rather broad, *anterior* elongate-trigonate, with the hinder margin rounded, or subelliptic: *legs* moderate; *tibiæ* short, the posterior with two pair of spurs. *Larvæ* sparingly covered with hairs, or densely pilose, the head nearly naked: pupa obtuse or acute.

The two insects which I have, with the utmost reluctance, associated together in this genus, differ so considerably, both in their perfect and larva state, that it becomes necessary to notice their respective distinctions. The proportions of the joints of the palpi* are the same in both species, but in *Ce. Jacobææ* the palpi are comparatively stout, with the two apical joints abbreviated, and the terminal one obtuse; in *Ce. miniata*, on the contrary, they are slender, with the apical joints greatly attenuated and elongated, the terminal one being subulated and very acute: the form of the wings is very dissimilar; in the first species the hinder margin of the anterior is gradually rounded, whereas in the second the costa is somewhat obliquely truncated, and the hinder margin obtusely elliptic: other differences of the perfect insects might be pointed out, especially the singularity of colouring in the first species, which is the only indi-

* Although these organs differ exceedingly in form and proportion in the various groups of *Lepidoptera*, I think it questionable whether we ought to consider the characters derived therefrom of a primary or secondary nature, inasmuch as there is but slight difference in the method employed by those insects for taking their pabulum, which consists of the nectarous juices of flowers alone.

genous Lepidopterous insect that has both surfaces precisely similar: the larvæ of *Ce. Jacobææ* are but slightly pilose, and feed upon flowers; whereas those of *Ce. miniata* are densely clothed with hairs, and subsist upon leaves: the latter are solitary, but the former are somewhat gregarious, and in that respect agree with those of the *Arctiidae*, with which family this genus has evidently so great an affinity that Latreille and others have generally associated it with the genus *Hypercompa*.

Sp. 1. *Jacobææ*. *Alis anticis utrinque fusco-cinereis, lineis maculisque duabus rubris, posticis rubris nigro-marginatis.* (Exp. alar. 1 unc. 6—11 lin.)

Ph. No. *Jacobææ*. *Linné*.—*Don.* ii. pl. 45.—*Ca. Jacobææ*. *Steph. Catal.* No. 6045.

Antennæ, head, thorax, abdomen, and legs black: anterior wings on both sides ashy-brown, with a longitudinal sanguineous streak towards the costa, and another abbreviated one on the inner margin at the base, and two spots of a similar colour on the hinder margin: posterior wings also similar on both surfaces, bright sanguineous, with the costa irregularly fuscous; fringe of all ashy-brown, excepting on the anal angle of the posterior, where it is sanguineous.

Var. β . The sanguineous colour converted into a pale luteous.

Caterpillar slightly hairy, black, annulated with yellow; it feeds on the flowers of the ragwort, and is most abundant at the end of June, when it changes, in a slight cocoon, to an obtuse reddish pupa; the imago appears in the following May.

Very abundant in the larva state in Darenth-wood; also at Hertford, in Epping Forest, at Ripley, and in a sand-pit near Charlton. "Scarce near Kimpton; found at Amesbury and at Marton Lodge, Yorks."—*Rev. G. T. Rudd*. "Near York, and in Suffolk."—*W. C. Hewitson, Esq.* "Common in Cambridgeshire."—*Rev. L. Jenyns*. "Abundant near Barnstaple, Devon."—*W. Raddon, Esq.*

Sp. 2. *miniata*. *Alis miniatis anticis strigis tribus nigris, secundâ undatâ, tertiâ punctatâ.* (Exp. alar. 10 lin.—1 unc. 4 lin.)

Ph. *miniata*. *Forster*.—Ph. *rosea*. *Don.* ii. pl. 40. fig. inf.—*Car. miniata*. *Steph. Catal.* No. 6046.

Antennæ luteous, with dusky ciliæ: head and thorax lutescent, abdomen paler, with the sides and under surface, in the males, fuscous: anterior wings dark rose colour, with one or two black spots at the base, then an undulated black striga, followed, behind the middle, with an oblique very much undulated one of similar hue, and on the margin a bent series of distinct black dots, varying in number: posterior wings paler, or ochraceous, immaculate, with the margin rose coloured: cilia of all pale luteous.

Caterpillar brown, with long gray hairs placed in tufts; the head reddish brown, with orange pubescence: it feeds on the birch, ash, and oak in the spring,

and the imago appears towards the end of June and beginning of July: the pupa is brown and acute; it is enclosed in a stout web, composed of silk and hairs.

Not very abundant, but found in several places in the metropolitan district; especially near Darenth-wood; and not very uncommon in a woody lane near Ripley, where I obtained several specimens during the two last seasons. I have also taken it at Hertford, Highgate and Colney Hatch woods, &c. "York."—*W. C. Hewitson, Esq.* "Coleshill."—*Rev. W. T. Bree.*

GENUS LXXXI.—EULEPIA, *Curtis.*

Palpi very short, bent upwards, slightly clothed with scales, obscurely triarticulate, basal joint as long as the other two, incurved; the other joints equal in length, rather more slender than the basal, the terminal one ovate-conic: *maxillæ* scarcely longer than the head. *Antennæ* bipectinated in the males, simple in the females, each joint in the latter sex bearing two short setæ: *head* small, squamous: *wings* oblong, convoluted: *legs* moderate, posterior with two pair of spurs. Larva slightly hairy. Pupa obtuse, folliculated.

This genus was separated by me from the Eyprepia of Ochsenheimer, about twelve years ago; the propriety of which is manifest by its characters having been since published by the name which is here retained. It differs principally from Deiopeia by having the maxillæ scarcely larger than the head, the two apical joints of the palpi of equal length, and the antennæ bipectinated in the males: from the preceding genus by the form of its wings; and from Lithosia by its three-jointed palpi.

Sp. 1. grammica. PLATE 17. f. 3.—*Alis luteis; anticis flavis nigro-striatis, posticis fasciâ terminali lunulâque nigris.* (Exp. alar. 1 unc. 4—6 lin.)

Ph. Bo. grammica. *Linné.*—Eu. grammica. *Steph. Catal. No. 6047.*

Antennæ luteous, with black radii: head black: thorax luteous, with three black streaks: abdomen orange yellow, with five rows of black dots: anterior wings pale luteous, longitudinally streaked with black, with a large spot of a darker hue, behind the middle, near the costa, and a dusky streak between it and the hinder margin, which last is bordered with black, and bears a bright luteous fringe: posterior wings deep luteous, with the margins black, two radiating streaks of a paler hue at the base towards the inner margin, and a deep black lunule in the middle; fringe luteous. Female similar, but rather brighter in colour. Like the following insect, this varies much. Caterpillar brown, with a luteous streak on the back, having a white longitudinal line, and a narrow longitudinal yellow line on each side above the legs, which are

orange-red: it feeds on the plantain, black-thorn, &c. and may be found towards the end of August, when it changes to a dusky pupa, and the imago appears in October.

Of this beautiful insect I have hitherto seen but two indigenous examples, both males, and taken in the autumn of 1815 near Windsor: one of them is in the collection of the British Museum, the other in my own cabinet, respectively presented by my valued friend, Dr. Leach. The insect has been taken by Mr. Donovan in North Wales, near Manachty, in the Isle of Anglesea; but I believe only one specimen.

Sp. 2. *cribrum*. *Alis anticis curulescenti-albis, transversè nigro-punctatis, posticis cinereis.* (Esp. alar. 1 unc. 4—6 lin.)

Ph. Bo. *cribrum*. *Linné*.—Eu. *cribrum*. *Curtis*, ii. pl. 56. *Steph. Catal.* No. 6048.

Ash-gray: head, spots on the collar and petagiæ, and down the back and sides of the abdomen, black; apex of the abdomen yellow: anterior wings ashy-gray, with five transverse angulated rows of black spots, two irregular longitudinal stripes diverging from the base, and a few dusky streaks towards the apex: posterior wings fuscous, with the margin darkest; fringe of all pale ashy; beneath entirely fuscous. It varies considerably, some specimens having more and others less black spots than others: the female is generally rather less than the male.

Caterpillar deep black when young.

For the discovery of this species as an inhabitant of Britain, entomologists are unquestionably indebted to the exertions of Mr. Bentley, who captured two males in June, 1819, near Ringwood, and kindly supplied my cabinet with one of them, on his return home in July: in the following year Mr. Dale also detected its habitat in the same vicinity (Parley Heath, Hants), and has since taken the insect in plenty, and to him I am obliged for part of my series. Four seasons back, and subsequently, however, the insect has been found in considerable abundance, I believe in the same locality, and some of the females laid eggs, which hatched, but the young larvæ unfortunately died before changing their first skin.

GENUS LXXXII. *DEIOPEIA mihi*.

Palpi elongate, bent upwards, slightly clothed with scales, triarticulate, the basal joint stoutest, the second longest, the third short, ovate: *maxillæ* as long as the antennæ. *Antennæ* simple in both sexes, rather short, slightly hairy beneath in the males: *head* short, scaly: *wings* deflexed, *anterior*

elongate, posterior broad, subdiaphanous, much folded: *body* subconic, stout, a little tufted in the male: *legs* moderate, *tibiæ* very short; posterior with two pair of spurs at the apex. Larva hairy: pupa folliculated.

Deiopeia, which was separated as a genus by me at the same time with *Eulepia*, differs considerably from the latter genus, and has evidently much affinity with the *Tineidæ*, and, as in that family, it has four palpi, though the second pair are but rudimentary. Unlike the *Lithosiæ*, all the species, which are very numerous, are known by the beautiful and lively colours with which their wings are adorned: from the genus just alluded to they also differ by having the palpi three-jointed, &c., and from *Eulepia* by the terminal joint of those organs being minute, the antennæ being simple in both sexes, the maxillæ elongated, and in less essential particulars.

Sp. 1. *pulchella*. *Alis anticis flavescens, atro sanguineoque punctatis, posticis lacteis nigro marginatis.* (Exp. alar. 1 unc. 5—9 lin.)

Ph. *Ti. pulchella*. *Linna.*—*De. pulchra*. *Curtis*, iv. *pl.* 169.—*De. pulchella*. *Steph. Catal.* No. 6049.

Antennæ and legs dusky: eyes black: head and thorax pale straw-colour, the latter spotted with yellow and black: abdomen milky-white, with the apex luteous, and a row of minute black spots on the sides: anterior wings pale straw-colour, with five irregularly bent rows of quadrate black spots, between which are several larger irregularly shaped sanguineous spots, the fringe pale-yellow, spotted externally with dusky: posterior wings milky-white, with a sinuated black margin, and a dusky spot at the apex of the basal areolet. Both sexes resemble each other.

Caterpillar bluish-gray, spotted with black and red, with a broad white dorsal stripe; legs dusky: it feeds on the Mouseear or Forget-me-not (*Myosotis arvensis*).

Of this truly beautiful species I have hitherto seen but four indigenous examples; one of which, in Mr. Vigors's cabinet, was taken many years since in Yorkshire; the second, a fine female, in that of Mr. Dale, found by him in a stubble field, near Christchurch, Hants, at the end of September, 1818; and a fine pair in my own cabinet, captured by Mr. Brown, in a similar locality, near Brighton, one about the middle of September, the other at the beginning of October, in the same year.

GENUS LXXXIII.—LITHOSIA, *Fabricius*.

Palpi short, irregularly covered with scales, biarticulate, the basal joint larger, attenuated, curved upwards, second joint minute, nearly rhomboid, or one-third as long as the first, elongate-trigonal; *maxillæ* longer than the antennæ.

Antennæ simple in both sexes, with a short seta on each articulation in the middle on both sides in the males: *head* short, squamose in front: *wings*, anterior elongate, subelliptic, convoluted; posterior broad, folded: *body* sub-linear, stoutest in the females, the apex tufted in the males: *legs* moderate: *tibia* short and slender. *Larva* more or less hairy: pupa folliculate.

The *Lithosiæ* are insects of very simple colours, being usually of various tints of ochraceous or yellow, with lighter margins, whence they have obtained the name of Footman Moths. From the great uniformity of their colouring, and the almost total absence of maculation or strigæ, the species have been much confused, and their synonymy confounded: I believe, however, that the following species are correctly named, and their synonyms properly arranged, in my Catalogue: their singular biarticulate palpi at once distinguish this genus from the others of the family; but in *Li. quadra* the terminal joint is rather elongate and bent upwards.

Sp. 1. *aureola*. PLATE 18. f. 1. *Alis anticis luteo-fulvis, subtus disco fusco, posticis utrinque flavis.* (Exp. alar. 10 lin.—1 unc. 2 lin.)

Bo. *aureola*. *Hübner*.—*Li. aureola*. *Steph. Catal. No. 6050.*

Antennæ dusky, yellowish at the base: head, thorax, and apex of the abdomen orange: legs ashy-gray: anterior wings bright luteous orange above, immaculate; beneath with a broad fuscous patch occupying the entire disc, leaving the margin above luteous: posterior wings paler, immaculate on both sides: fringe of all deep orange.

Caterpillar black, with three pale-yellow, interrupted stripes on the back, and some white spots on the tail: it feeds on the spruce fir (*Pinus Abies*) and Scotch fir (*Pinus sylvestris*), and is found in May and June: the imago appears about the middle of July.

Decidedly a scarce species near London: I have taken it at Birch-wood, and in a fir-plantation near Ripley; it has also been found at Coombe-wood.

Sp. 2. *helvola*. *Alis anticis lividis cinereo fulvoque marginatis.* (Exp. alar. 9 lin.—1 unc. 2 lin.)

Bo. *helvola*.—*Hübner*.—*Li. helvola*. *Steph. Catal. No. 6052.*

Antennæ with the shaft whitish, the cilia lutescent: head and thorax luteous: abdomen grayish-yellow, with the apex luteous: anterior wings ochraceous-yellow, the hinder-margin ashy-gray, and the anterior towards the apex luteous; beneath the disc is fuscous, with the margins luteous: posterior wings ochraceous yellow, with the hinder margin cinerous: fringe of all the wings luteous.

Also very rare, especially near London: my specimens occurred near Brockenhurst in the New Forest, where the insect has been



taken several times. I believe it has also occurred in the neighbourhood of Woodford or Epping Forest.

Sp. 3. *flava*. *Alis omnibus undique flavis immaculatis*. (Exp. alar. 1 unc. 4—6 lin.)

Li. *flava*. *Fabricius*.—*Steph. Catal. No.* 6031.

Antennæ luteous: head, thorax, and abdomen pale ochraceous: eyes black: anterior wings above pale ochraceous-yellow or straw-colour; beneath paler, immaculate; posterior wings whitish yellow: cilia of all pale luteous: legs pale yellow.

Like the two preceding species, this is also very uncommon: it has been taken near Birch-wood and at Darenth: and I have one specimen, which was caught near Brockenhurst in the New Forest.

Sp. 4. *gilveola*? *Alis flavescens, anticis subtilius cinerascens, posticis utrinque pallidis*. (Exp. alar. 1 unc. 4—6 lin.)

Li. *gilveola*. *Ochsenheimer*?—*Steph. Catal. No.* 6053.

Size of the last: antennæ, head, thorax, and apex of the abdomen bright luteous; rest of the abdomen cinerascens: anterior wings pale luteous-yellow, with the disc slightly suffused with cinereous beneath, with a large cinerascens patch on the disc, the margins luteous: posterior wings on both sides pale yellow, tinged with cinereous: legs deep luteous: eyes black.

I have a fine pair of this apparently very rare species, which were captured either at Birch or Darenth-woods, and are the only indigenous examples that have hitherto come under my notice.

Sp. 5. *complana*. *Alis anticis plumbeis, margine anteriori luteo, posticis totis flavis*. (Exp. alar. 1 unc.—1 unc. 4 lin.)

Ph. No. *complana*. *Linné*.—Li. *complana*. *Leach, Z. M. i. pl.* 49. *fig.* 3. *Steph. Catal. No.* 6054.

Antennæ cinereous, with the base of the shaft luteous: head bright luteous: thorax and abdomen cinereous or fuscous, the apex of the latter yellow: anterior wings deep fuscous or lead-colour, with the costa bright yellow nearly to the apex, and the fringe ochraceous-yellow; beneath with the disc deep fuscous, the anterior margin and tip ochraceous-yellow: posterior wings on both sides yellow; fringe pale luteous.

Caterpillar black, with two yellow streaks, spotted with red and white, on the back, and a narrow yellowish line on each side; it is slightly hairy: it feeds on the oak, ash, poplar, sloe, &c.: also upon the *Pinus sylvestris*, and is found about May, the imago appearing at the end of July or beginning of August. The pupa is reddish-brown.

The most abundant species of the genus; occurring in plenty in woods and shady lanes throughout the metropolitan district, and

far from uncommon in several other places. “Common at Kimp-ton and at Marton, Yorkshire.”—*Rev. G. T. Rudd*. “Epping.”—*Mr. H. Doubleday*.

Sp. 6. *depressa*. *Alis anticis cinereo-plumbescentibus, margine anteriori luteo; posticis utrinque flavis basi cinerascens*. (Exp. alar. 1 unc. 6 lin.)

No. *depressa*. *Esper?*—*Li. depressa*. *Steph. Catal. No. 6055*.

Larger than the foregoing: antennæ pale ash, with the base yellowish: head and anterior margin of the thorax bright luteous, the rest of the thorax and base of the abdomen cinereous; the apex and margins of the latter yellow: anterior wings very narrow: the entire disc pale lead-coloured ash, with the costa luteous, the extreme edge being bright orange, and the coloured margin of an uniform width to the fringe: the latter short, pale ashy-yellow: posterior wings with the base cinerascens, the colour gradually blending with that of the outer margin, which is clear pale yellow, pale luteous.

Caterpillar feeds on the *Pinus sylvestris*: it is of a grayish-brown, with the back yellow, spotted with black: it is found in June, and the imago towards the middle of July. The pupa is reddish.

One of my specimens of this pretty and distinct species was taken at Darenth-wood about ten years since, and in July, 1827, I captured a fine pair near Ripley. I have not observed the species in other cabinets.

Sp. 7. *griseola*. *Alis anticis cinerascens, margine anteriori tenuè stramineo; posticis lividis*. (Exp. alar. 1 unc. 3—6 lin.)

Bo. *griseola*. *Hübner*.—*Li. griseola*. *Steph. Catal. No. 6056*.

Antennæ dusky-gray: head, front of the thorax, and apex of the abdomen pale yellow; disc of the thorax and base of the abdomen ashy-gray: anterior wings clear ashy-gray, with the anterior margin, at the base especially, pale straw-colour, the fringe ashy-gray; under side nearly similar: posterior wings on both sides ashy-gray; fringe rather paler.

This insect occurs in the utmost profusion in a woody lane near Ripley, towards the end of July or beginning of August; it is likewise far from uncommon near Hertford, though it has been usually esteemed rather a scarce species.

Sp. 8. *plumbeolata*. *Alis anticis cinereo-plumbescentibus, costâ tenuissimè flavescens; posticis cinereo-flavis*. (Exp. alar. 1 unc. 5—6 lin.)

No. *plumbeolata mihi*.—*Steph. Catal. No. 6057*.

Similar to, but rather larger than, the last: the head bright luteous: antennæ, thorax, and abdomen cinereous: anterior wings of a pale lead-coloured ash, with the costa narrowly edged with yellowish; fringe flavescens: posterior wings above cinereous-yellow, beneath paler; fringe straw-colour.

A pair that I possess of this species I obtained from the collection of Mr. Hall ; but their locality is unknown to me : I have seen other specimens which were found near London.

† Sp. 9. muscerda. *Alis cinereis, anticis punctis aliquot nigris.* (Exp. alar. 1 unc. 4 lin.)

Ph. muscerda. *Hufnagle*.—Li. muscerda. *Curtis*, i. pl. 36. *Steph. Catal. pt. ii. p. 61. No. 6058.*

Antennæ, head, thorax, and abdomen pale ashy-gray ; the apex of the latter brownish : the anterior wings pale fuscous ; the costa straw-coloured at the base ; towards the apex are three small black spots placed obliquely, and two others towards the middle of the inner margin ; the under side is ashy-gray : posterior wings deep immaculate ashy-gray ; fringe of all fuscous.

Two specimens only of this insect have, I believe, hitherto occurred ; they were found in a marsh at Horning, Norfolk, floating upon the water, in a ditch, by Mr. Sparshall.

Sp. 10. quadra. *Alis anticis maris lividis basi fulvis, costâ cæruleo-nigrâ ; fœminæ luteis, punctis duobus atro-cæruleis.* (Exp. alar. ♂. 1 unc. 8—10. lin. : ♀ 1 unc. 8 lin. : 2 unc.)

Ph. No. quadra. *Linné*.—*Don*. ix. pl. 306.—Li. quadra. *Steph. Catal. pt. ii. p. 61. No. 6059.*

Antennæ dusky-brown : eyes black ; head, thorax, and abdomen ochraceous-yellow : legs blue : male with the anterior wings yellowish-gray, with the apex dusky, the base bright tawny yellow, with the costa blue-black : posterior wings ochraceous-yellow, with the base more or less dusky. Female with the anterior wings rich citron-yellow, with two bright deep-blue spots in the middle, one on the costa, the other placed obliquely towards the base of the inner margin : posterior paler, immaculate.

Var. β. Male with the anterior wings of an uniform deep fuscous, with the usual marginal spot at the base.

Var. γ. Female without the blue spots on the anterior wings.

Caterpillar dusky ; the back marked with red dots and a black spot, the sides with black lines : it feeds on the oak, birch, fir, &c. towards the end of May ; and changes about the middle of June to a black pupa in a strong web ; and towards the middle of July the imago appears.

Extremely abundant in certain seasons in the New Forest near Brockenhurst, and near Chigwell-row in Epping Forest ; it also occurs, though more sparingly, at Darent, Birch, and Coombe-woods. “ Very common at Kimpton and Amesbury last season.”—*Rev. G. T. Rudd*. “ Lowestoft, Suffolk.”—*W. C. Hewitson, Esq.*

GENUS LXXXIV.—GNOPHRIA* *miki*.

Palpi moderate, curved upwards, sparingly covered with scales and slightly hairy beneath, triarticulate; the two basal joints of nearly equal length, the first stout, the second sublinear, the terminal minute, subovate: *maxillæ* as long as the antennæ. *Antennæ* similar in both sexes, the male with a single seta on both sides of each articulation: *head* scaly in front, small: *wings*, anterior elongate, narrow; *posterior* orbicular-trigonate, folded: *body* short, rather stout, subconic, with a tuft at the apex in the males: *legs* short, rather stout; *tibiæ* short, robust, the posterior with two pair of spurs. Larva pilose; pupa folliculated.

Gnophria is at once distinguished from Lithosia, which it most resembles in form, by its triarticulated palpi, and, in the only indigenous species, by its deep black colour:—from Setina it differs by the elongation of its wings, and the brevity of its body.

Sp. 1. rubricollis. *Atra*, abdomine postice flavo, collari sanguineo. (Exp. alar. 1 unc. 1—4 lin.)

Ph. No. rubricollis. *Linné*.—*Don*. x. pl. 350. f. 3.—Gn. rubricollis. *Steph. Catal. pt. ii. p. 61. No. 6060*.

Entirely of a deep black, with the collar bright sanguineous, and the apex and under side of the abdomen of a rich golden-yellow.

† Var. β. The anterior wings with an elongate naked patch on the disc.

Caterpillar greenish-ash, with dusky or black fasciæ, spotted with red and white; head piceous, with two white streaks:—it feeds on various kinds of lichens; is found in June, changing to a reddish-brown pupa, in a grayish web, and appearing in its final state about the middle of July.

Not uncommon in the lane leading into Darenth-wood from the village; and occasionally found in other parts of the wood. “In profusion in June last at Collingbourne-wood.”—*Rev. G. T. Rudd*. “Epping, rare.”—*Mr. H. Doubleday*. Var. β. is in the British Museum.

GENUS LXXXV.—SETINA.

Palpi short, ascending, slightly divaricating, hairy beneath, triarticulated; the two basal joints of equal length, the first stoutest, the next sublinear, the terminal one very minute, subovate: *maxillæ* elongate. *Antennæ* simple in both sexes, ciliated in the males: *head* small, pilose in front; *thorax* slightly pilose: *body* rather slender, sublinear, stoutest in the females: *wings* short,

* Γνοφρός, caliginosus.



anterior elongate, trigonate; *posterior* broad, slightly emarginate on the hinder edge: *legs* not very stout: *tibiæ* moderate, rather slender; the posterior with two pair of spurs. Females smaller than the males. Larva pilose; pupa folliculate.

Setina differs from the other genera of the family by the semi-orbulate-triangular form of the entire insect when displayed, arising from the comparative brevity of the anterior and length of the posterior wings: from Lithosia it may be at once distinguished by its triarticulate palpi, and from Gnophria by the minuteness of the terminal joint of the same organs, as well as from the lively yellow tinge which adorns the wings, which are usually more or less spotted with black. It is probable that the genus may require subdivision, as the two first species evidently differ in habit from the third; have the palpi minute, and the wings subdiaphanous. I am not certain whether the name above employed be correctly applied to the present genus, not being aware of the type of Schreber's genus Setina; but I used it in preference to coining a new term, as all the species are included in that genus by Schrank.

Sp. 1. irrorella. PLATE 17. f. 1. *Alis luteis, anticis punctis nigris trifariis, thorace anticis posticæque fulvo.* (Exp. alar. ♂ 1 unc.—1 unc. 3 lin.: ♀ 9 lin. 1—unc.)

Ph. Ti. irrorella. Linné.—Se. irrorella. Steph. Catal. pt. ii. p. 62. No. 6061.

Antennæ, legs, head, thorax, and abdomen black, the tip of the latter, the collar and petagiæ orange-yellow; the back with a large yellowish spot: anterior wings of a clear orange-yellow, with three transverse rows of black spots, two of which are towards the middle; and the third, somewhat irregularly waved, on the hinder margin: cilia bright orange-yellow: posterior wings pale orange-yellow, with two or three black spots towards the hinder margin anteriorly. Female less, but similar.

† Var. β. Steph. Catal. l. c. The anterior wings with the two central rows of spots united by black lines, forming the letters IVI very distinctly.

Caterpillar black, with yellow dorsal and lateral stripes; it feeds on the common Lichen, (*Lichen parietinus*), and changes to a red-brown pupa; the imago appears in June.

An insect very irregular in its appearance, and excessively local; several specimens have been caught on Dartford-common, and near Birch-wood. "Taken copiously near Rochester in 1816, and the following year."—*Rev. Professor Henslow*:—in whose collection, which is now incorporated with that of the Cambridge Philosophical Society's, var. β. was contained.

Sp. 2. *roscida*. *Alis fulvis, anticis nigro-punctatis, posticis maculatis*. (Exp. alar. ♀. 8 lin. ♂ 10 lin.—1 unc.)

Li. *roscida*. *Fabricius*.—Se. *roscida*. *Steph. Catal. pt. ii. p. 62. No. 6062*.

Less than the foregoing: antennæ black, with luteous radii: head, thorax, and abdomen black; the tip of the latter, collar, and petagiæ, luteous: the two first pair of legs dusky-blue; the tibiæ and tarsi beneath, of the hinder pair, yellow; anterior wings deep luteous, with three rows of black spots, as in the former insect, the posterior row being very irregular, and composed of dissimilar-sized dots; posterior wings with several black spots on the hinder margin.

This species has been taken at Riddlesdown, near Croydon, in June; but it is far less abundant than the foregoing.

Sp. 3. *eborina*. *Alis anticis albidis aut flavis, margine flavo, punctisque duobus fuscis; posticis suprâ nigrescentibus, subtus flavis*. (Exp. alar. ♂ 1 unc.—1 unc. 3 lin.: ♀ 10 lin.—1 unc.)

Li. *eborina*. *Fabricius*.—*Steph. Catal. pt. ii. p. 62. No. 6063*.

Antennæ, head, and thorax anteriorly luteous; eyes black; abdomen whitish, with the apex luteous: anterior wings whitish and glossy, with the costa and posterior margins luteous; each with two minute black dots, one in the middle of the costa, the other nearly opposite, on the inner margin: posterior wings above dusky, with the hinder margin and cilia luteous: beneath the anterior wings have the disc dusky, and the posterior whitish-yellow.

Var. *β*. *Steph. Catal. l. c.* With the anterior wings pale-yellow, the margins deep luteous, the spots as in var. *α*.

Far from uncommon during the beginning of August at Darent, Birch, and Coombe woods; I have also met with it at Hertford and Ripley. “Epping, common.”—*Mr. H. Doubleday*.

FAMILY II.—NOCTUIDÆ.

Antennæ moderate, not very slender, setaceous, sometimes pectinated or ciliated in the males: *palpi* as long or longer than the head, more or less compressed, pilose, mostly three-jointed, the terminal joint generally shortest: *maxillæ* very distinct, spiral, usually much elongated: *wings* generally deflexed, not divided, sometimes horizontal or incumbent, never convoluted, the anterior generally bearing stigmata: *thorax* very frequently crested, stout: *body* stout, elongate-conic, squamous; of the males, usually tufted at the apex: *legs* moderate; anterior *tibiæ* rather short; generally furnished with a compressed spine interiorly; intermediate with a pair of spurs at the apex; and posterior mostly with a pair of spurs in the middle, and a second at the tip. *Larvæ* considerably diversified, with fourteen or sixteen feet, always cylindric, the extremities not being attenuated; sometimes perfectly smooth, at others

furnished, on the anal segment, with tubercular elevations, or a conical prominence; in one group the sides are ciliated, and in others they are clothed with long fascicles of hair: pupa various, most frequently subterraneous, sometimes folliculated; the folliculus simple, mixed with hair, or small fragments of wood, earth, &c.

The insects to which I have restricted the term Noctuidæ, “par excellence,” are so extremely similar in general structure, although considerably diversified in appearance, that, as observed in a former page, it is nearly impossible to frame distinguishing generic characters: nevertheless, it cannot be disputed, that the family comprises many very distinct genera; a fact that receives confirmation from the recent labours of the continental naturalists, Ochsenheimer, Treitscke, and Boisduval, who have proposed several generic divisions in this family, and have each given an incomplete arrangement of the European species, in accordance with their respective views; those of the former writer forming the basis of the others. The following arrangement* differs materially from either, as the location of several of the genera, as proposed by the above writers, appears to me unnatural; though, as I am fully aware of the utter impossibility of placing the whole in one continuous series, I do not presume to assert that my views are more correct. Dr. Horsfield, upon the consideration of their metamorphosis, thinks that the European species should be divided into three families; though, from the perfect insects being so extremely similar, I have not ventured to separate them, but have attempted to arrange them somewhat in accordance with their transformations; of which I shall endeavour to point out the peculiarities, as I proceed with my descriptions.

The typical groups of the Noctuidæ, as their name imports, fly only by night, and repose during the day, in the crevices of the bark of trees, old walls, palings, &c.; though others not only fly by night, but during the afternoon and at twilight: the position of the wings during repose varies much; in some groups, (as *Triphæna*, &c.) they are placed horizontally, and closely applied to the body, giving the insect a somewhat cylindrical form; in others, (*Catocala*, &c.) they are also placed horizontally, but somewhat expanded, and forming a triangle; in others, (as *Plusia*), they are considerably deflexed, and the thorax is also greatly crested: there is also considerable

* See Addenda for the tabular view.

diversity in the form of the wings, though in general the anterior ones are elongate-triangular, and the posterior somewhat triangular-orbiculate; some few have the posterior margins denticulated; and the anterior wings are mostly adorned with two stigmata, one more or less circular, the other reniform; a character rarely observed in any other family of this order. The larvæ are usually solitary, do not reside in a web, neither are they subcutaneous; but those of the genus *Ceropacha* twist up the leaves, similarly to those of the Tortricidæ: the pupa are usually subterraneous.

GENUS LXXXVI.—TRIPHÆNA, *Ochsenheimer*.

Palpi ascending, compressed, parallel, triarticulate, the two basal joints clothed with very compact capitate scales, terminating acutely in front, the apical somewhat exposed; the basal joint shorter than the following, and curving upwards; the second as long as the other two, a little bent inwards towards the apex; the terminal short, rather slender, somewhat attenuated at the tip, which is obtuse: *maxillæ* very long. *Antennæ* simple in both sexes, ciliated beneath in the males: *head* densely clothed with scales: *thorax* not crested, with large anterior tippets: *body* rather stout, flat on the back; downy at the base: *wings* horizontal, entire, anterior elongate-lanceolate, rounded posteriorly, with two stigmata; *posterior* orbiculate-triangular, slightly emarginated, large, folded during repose, of lively colours, usually luteous, with black margins. Caterpillar naked, cylindric, with sixteen legs: pupa subterraneous, not foliculated.

In placing this genus at the commencement of the Noctuidæ, I am guided more by the pomeridian habits of the perfect insects and their lively colouring, (in which they resemble the Catocalæ, at the other extremity of the family) than by any real affinity to the Pomeridianæ: it may, however, be remarked, that, in common with *Agrotis* and some of the intermediate genera, the larvæ of the *Triphænæ* are evidently, though not entirely, radicivorous, and rarely venture from their lurking-places during the day; and the imago, when at rest, is not very dissimilar in appearance to a *Lithosia*: the gay-coloured posterior wings, with dark borders, render the species very conspicuous: they fly during the afternoon with great velocity in a straight line, as if casually, and again in the evening.

Sp. 1. orbona. *Alis anticis hepaticis, posticis luteo-flavis, lunulâ centrali strigâque posticâ nigris.* (Exp. alar. 1 unc. 7—8 lin.)

No. orbona. *Fabricius*.—*Don*. x. 36. pl. 343.—*Tr. orbona. Steph. Catal. pt. ii. p. 62. No. 6064.*

Head, thorax, and abdomen dull hepatic-brown or testaceous, the apex of the latter rufescent: anterior wings concolorous with the thorax, and more or less obsoletely punctate-striated transversely, two obscure strigæ being at the base, beyond which the ordinary stigmata appears, with the middle dusky and the margins pale; these are followed by a bent geminated striga of black dots; then an undulated pale streak, between which and the hinder margin the colour of the wing is paler; the edge of the wing at the base of the cilia has a row of black dots: the posterior wings are luteous-yellow, with a blackish central lunule, and an irregular marginal fascia. The colours and intensity of the markings vary considerably; in some specimens the latter are completely obliterated; in others they are very strong: and the former is occasionally of a deep rusty-testaceous, somewhat virescent, or tawny: the lunular streak on the posterior wings is sometimes nearly evanescent. Caterpillar greenish, spotted with black on the sides.

Not uncommon throughout the metropolitan district, towards the end of June and beginning of July:—in great plenty near Ripley. “York and Suffolk.”—*W. C. Hewitson, Esq.* “Allesley.”—*Rev. W. T. Bree.* “Epping.”—*Mr. H. Doubleday.* “Netley, Salop.”—*Rev. F. W. Hope.* “Bottisham.”—*Rev. L. Jenyns.*

† Sp. 2. subsequa. *Alis anticis griseo-hepaticis, maculâ reniformi obscuriori lineolâque apicis atris; posticis flavis, lunulâ strigâque posticâ fuscis.* (Exp. alar. 1 unc. 8—9 lin.)

No. subsequa. *Hübner*.—*Tr. subsequa. Steph. Catal. pt. ii. p. 62. No. 6065.*

Rather larger than the foregoing; usually of a paler hue and the markings less evident, but similarly placed, with the reniform stigma obscure and a black streak at the apex of the anterior wings; the posterior are yellow with a fuscous central lunule and posterior marginal band; the head and thorax are concolorous with the anterior wings.

Mr. Curtis informed me, shortly after he returned from Scotland, that he captured a specimen of this insect during his excursion; but as I have not had an opportunity of examining it, I am compelled to give the above insufficient description of the species from Engramelle.

Sp. 3. pronuba. *Alis anticis hepaticis fusco albidoque strigatis, margine antici thoracisque fasciâ albicante, posticis luteis, strigâ angustâ nigrâ.* (Exp. alar. 2 unc.—2 unc. 3—4 lin.)

Ph. No. pronuba. *Linné*.—*Don*. ix. pl. 311.—*Tr. pronuba. Steph. Catal. pt. ii. p. 63. No. 6066.*

Head and thorax anteriorly pale griseous-ash, or whitish; the latter posteriorly pale-griseous or fuscous; abdomen luteous: anterior wings fuscous, variegated with griseous and whitish or cinereous, with the costa pale at the

base, two undulated pale strigæ near the base, margined on each side with black, two other arcuated pale strigæ beyond the stigmata, followed towards the hinder margin with a whitish waved streak, arising from three or four more or less confluent black spots on the costa, near the apex; on the hinder margin is a series of dusky or black spots; the anterior stigma is pale, a little clouded with dusky; the posterior dusky in the middle, with a pale margin surrounded with black or dusky: the posterior wings bright luteous, with a narrow submarginal waved band, attenuated towards the inner margin; fringe luteous.

No two specimens of this inconstant species are found precisely similar, it would therefore be fruitless to attempt to describe its varieties: it may be observed, that the ground colour of the thorax and anterior wings is sometimes very pale griseous, with a few darker markings, and the reniform (or posterior) stigma conspicuously dark in its centre;—the space between the stigmata, and a triangular spot between the anterior one and the base of the wing, are sometimes deep black, at others concolorous with the wings, as are the stigmata themselves; the hinder margin is occasionally destitute of the row of black spots, and is sometimes darker than the rest of the wing, at others lighter.

Caterpillar greenish or brownish, with two rows of interrupted black streaks on each side, and a pale dorsal line:—it feeds upon the roots of various plants, especially of the primrose, violet, auricula, cabbage, &c., hiding itself by day, beneath stones, clods, &c., and coming out in the evening to feed: it is found throughout the winter; and in the spring, about April or May, it changes to an elongate reddish pupa, which emerges in its final state in the beginning of June, or as late as the middle of July.

One of the most abundant of the indigenous Lepidoptera, at least throughout the south of England; and, I believe, far from uncommon in other parts; frequenting hedges and gardens. “York and Newcastle.”—*W. C. Hewitson, Esq.*

Sp. 4. *innuba*. *Alis anticis hepaticis, margine antici thoraceque concoloribus, posticis luteis, strigâ submarginali nigrâ.* (Exp. alar. 2 unc.—2 unc. 4 lin.)

Tr. *innuba*. *Ochsenheimer.—Steph. Catal. pt. ii. p. 63. No. 6067.*

Differs from the preceding by having the head, thorax, and anterior wings concolorous, without a pale anterior streak, as in that insect: these parts are in general of a very deep fuscous, or rusty-brown, but the markings are throughout similar in their dispositions to those of Tr. *pronuba*, though usually they are more obsolete, and in some examples nearly obliterated: the stigmata are mostly dark, with a pale ring; and, as in the last named insect, the anterior one varies considerably in form: the posterior wings are similar to those of Tr. *pronuba*.

This is equally variable with the foregoing species, and sometimes occurs nearly ferruginous.

Ochsenheimer gives this as a distinct species from the preceding; but I think with Boisduval, that it is a mere variety of that insect, as the only difference between

them appears to consist in the dissimilar colour of the head, and anterior margin of the thorax and anterior wings, and in the usually deeper colour of the insect.

Found equally common, and in similar places, with *Tr. pronuba*.

Sp. 5. *fimbria*. *Alis anticis griseis vel hepaticis strigis dilutionibus, posticis aurantiacis, fimbriâ latissimâ nigrâ.* (Exp. alar. 2 unc.—2 unc. 3 lin.)

Ph. No. *fimbria*. *Linné.*—*Don.* vi. pl. 208.—*Tr. fimbria.* *Steph. Catal. pt. ii.* p. 63. No. 6068.

Head, thorax, and anterior wings concolorous, most frequently pale griseous, the latter with two oblique dusky streaks towards the base, the anterior of which is abbreviated, and the posterior reaches to the inner margin; behind the stigmata is an angulated pale streak, and between it and the hinder margin is an undulated one, having one or two more or less conspicuous black dots at its origin on the costa, towards the apex of which are three or four minute white spots; the stigmata are frequently conjoined, are dusky with a pale margin, and are placed in a darker band on the wing: the posterior wings are light orange at the base, with a very broad submarginal border, the fringe being orange: abdomen also of the latter colour.

The anterior wings vary much, being sometimes nearly black, and of all intermediate shades to the above, with the usual pale markings.

Caterpillar very stout, ochraceous, with the head reddish, a pale dorsal line, and black spots on the stigmata:—it feeds also on the primrose, violet, potato, &c. and occurs in the autumn and spring; the imago appearing towards the end of June, or beginning of July.

Unquestionably a scarce, but a diffused, species, occurring in Devonshire, Norfolk, Suffolk, Derbyshire and Yorkshire, and in the vicinity of London. I once took a specimen at Darenth-wood, and saw two captured in Norwood: in the former wood it has been taken repeatedly. “Epping.”—*Mr. H. Doubleday*. “York, once.”—*W. C. Hewitson, Esq.* “Near Sheffield and Buxton.”—*Rev. F. W. Hope*.

Sp. 6. *interjecta*. *Alis anticis sordidè ferrugineis punctato-strigatis, posticis luteis nigro-circumcinctis.* (Exp. alar. 1 unc. 2—5 lin.)

No. *interjecta*. *Hübner.*—*Tr. interjecta.* *Steph. Catal. pt. ii.* p. 63. No. 6069.

Head, thorax, and anterior wings generally of a dull ferruginous, the latter with various obsolete waved dusky strigæ, and a double streak of black spots towards the hinder margin, posterior to the stigmata, which latter are very obsolete; the hinder margin itself is rather paler than the rest of the wing, and at the base of the cilia is an indistinct dusky line: the posterior wings are luteous, with dusky streaks at the base, and a broad undulated black submarginal band behind; fringe luteous.

Less variable than the preceding species, though inconstant in its markings and colour.

Not a very common insect, but occasionally found in tolerable plenty: in June, 1826, I took a considerable number both of this and the next species in a lane near Hertford; and about sixteen years back I also captured several of each, at the extremity of Lordship-lane, near Dulwich. This species is also found at Darent, Birch, and Coombe woods. “Epping.”—*Mr. H. Doubleday*.

Sp. 7. *Janthina*. *Alis anticis fuscis griseo-irroratis stigmatibus albedo-cinctis, posticis atris, maculâ mediâ margineque aurantiacis.* (Exp. alar. 1 unc. 5—8 lin.)

No. *Janthina*. *Wien. V.*—Tr. *Janthina*. *Steph. Catal. pt. ii. p. 63. No. 6070.*

Head and thorax anteriorly of a pale cinereous; the latter posteriorly, abdomen and anterior wings deep griseous brown, the latter varied and banded with a deeper hue, with a subovate rusty-brown spot near the apex of the costa, in which are three or four minute white spots at the costa itself; the ordinary stigmata are very indistinct, being faintly exhibited by a few interrupted whitish spots, which are occasionally wanting: the posterior wings have the base and a broad submarginal band deep black, with the centre and fringe bright luteous orange; the fringe sometimes clouded with dusky towards the costa.

Also a variable species, but less so than its congeners.

Caterpillar whitish, with undulated dusky streaks on the sides, and black spots posteriorly;—it feeds on chickweed, &c., and changes to a brown pupa, with two spines at its apex: the imago appears in July or August.

Found in shady lanes, and on the borders of woods, with the foregoing species, than which it is more abundant, though far from common. “Epping.”—*Mr. H. Doubleday*. “York and Suffolk.”—*W. C. Hewitson, Esq.* “Allesley.”—*Rev. W. T. Brce*.

GENUS LXXXVII. *CERIGO mihi*.

Palpi rather porrect, ascending, slightly compressed, clothed with loose hair-like scales, triarticulate, the joints of nearly equal length, the basal joint reniform, the next cylindric, slightly attenuated at the apex, the terminal more slender, bending outwards, and somewhat acute: *maxillæ* long. *Antennæ* elongate, setaceous, slightly pectinated to the apex in the males: *head* clothed with loose scales: *thorax* stout, a little crested behind, loosely squamous: *body* cylindric, rather long, slightly carinated on the back, tufted at the apex: *wings* horizontal, entire, anterior elongate-triangular, with three stigmata: *posterior* suborbiculate-triangular, usually pale yellow, with a darker hinder border.

Ochsenheimer places *Cerigo* in his extensive genus *Polia*, dividing it, however, from the typical species by forming it into a section; but it appears to me that its characters are not only clearly distinct from those of the true *Polia*, but that they are of sufficient im-

portance to constitute a generic difference, and moreover that the habits of the species are more closely allied to the *Triphæna* than to the genus before alluded to, from which it is at once known by its proportionably shorter and broader wings, and by the lively colour of the posterior ones: from *Triphæna* it differs in the proportion of the joints of its palpi, subcrested thorax, and dissimilar antennæ.

Sp. 1. texta. *Alis anticis fuscis albido nebulosis, strigis flexuosis albis nigro adnatis, posticis stramineis, margine latè fusco.* (Exp. alar. 1 unc. 6—9 lin.)

No. texta. *Esper.*—Ce. texta. *Steph. Catal. pt. ii. p. 63. No. 6071.*

Head and thorax fuscous: anterior wings the same, with a cinereous tinge, varied with whitish; at the base is an abbreviated bent dusky striga, united longitudinally to a transverse waved one of white, bordered posteriorly with black, anterior to the stigmata; behind these last is a more distinct arcuated white streak edged internally with black, and between this and the hinder margin is an irregular deeply undulated pale striga: in the margin itself is a row of dusky spots; the ordinary stigmata are dusky with paler margins, and between these and the inner margin is an elongate one, indicated by a double black streak, as in the species of the genus *Agrotis*: the posterior wings are light straw-colour, with a broad dusky margin, in which are a few white dots edged with black posteriorly; fringe also dusky.

Var. β . With the anterior wings beautifully varied with rich purplish-rosy tints, especially the disc of the stigmata.

Caterpillar whitish-gray, with a black dorsal line:—it feeds on the goat's-beard (*Tragopogon*):—the imago appears about June.

Far from an abundant species in most places; it has occurred sparingly at Darent, Birch, and Coombe woods, on Epping Forest, at Colney Hatch, and in Norfolk. “Epping, very common.”—*Mr. H. Doubleday*:

GENUS LXXXVIII.—LYTÆA *miki*.

Palpi slightly ascending, triarticulate, the two basal joints densely clothed with elongate loose depending clavate scales, the terminal almost naked; the two basal joints of nearly equal length, the first slightly curved and very robust, the second more slender, gradually attenuated from the base to the apex; the terminal minute, ovate obtuse: *maxillæ* elongate. *Antennæ* rather long, serrated internally in the males, and ciliated; simple in the females: *head* and *thorax* downy, the latter stout and not crested: *body* rather short, slender, very downy at the base, slender posteriorly and tufted at the apex, and on the sides: *wings* horizontal, entire; *anterior* rounded posteriorly; *posterior* scarcely emarginate on the hinder margin; of a dingy hue, with a darker margin. *Larva* radicivorous: *pupa* subterranean.

Lytaea may be known by the stoutness of its thorax, and the slenderness of its short tufted abdomen, with the rotundity and glossiness of its wings: the length of its robust serrated antennæ, the proportions and form of the joints of the palpi, and the elongated loose depending scales, which clothe the two basal joints of the latter, leaving the apical one nearly and conspicuously exposed.

Sp. 1. *umbrosa*. *Alis anticis pallidè griseo-roseis, strigis faciâque inter stigmata ordinaria fusciscentibus.* (Exp. alar. 1 unc. 4—8 lin.)

No. *umbrosa*. *Hübner*.—*Ly. umbrosa*. *Steph. Catal. pt. ii. p. 64. No. 6072.*

Head and thorax of an immaculate griseous-rosy; anterior wings the same, inclining to cupreous, and glossy; with an abbreviated dusky striga at the base, a second rather undulated one, between it and the anterior stigma, a broader irregular angulated one between the stigmata, expanding into a dusky patch towards the costa; behind the posterior stigma, a fourth gradually bent striga, followed midway between it and the hinder margin with a broader waved one, and a narrow streak on the margin of the wings itself: the posterior wings ashy-brown at the base, with an obsolete transverse striga, and a broad fusciscent margin; cilia rosy: abdomen cinereous, with the lateral and anal tufts rosy.

Caterpillar ashy-white, with a dusky stripe on each side of the back.

Occasionally taken near Birch-wood, and I have twice found it in Sydenham-wood at the end of July. “Netley, Salop, abundantly in August, 1827.”—*Rev. F. W. Hope.*

GENUS LXXXIX.—*CHARÆAS mihi.*

Palpi very short, triarticulate, the two basal joints densely squamous, the terminal slightly exposed, the basal joint shorter and stouter than the following, which is stout at the base and gradually attenuated to the apex, the terminal slightly elongate, acute, or ovate acuminate: *maxillæ* long. *Antennæ* simple in the females, more or less pectinated in the males: *head* small, squamous: *thorax* robust, not crested: *body* short, slightly carinated on the back; the apex of the males with a tuft: *wings* generally denticulated on the hinder margin, sometimes rounded; *posterior* not very large, ovate-triangular, usually whitish in the males, fuscous in the females. *Larvæ* naked, radicivorous; *pupa* subterraneous.

The typical species of this genus are distinguished by having their wings more or less denticulated, a character not very common amongst the Noctuidæ; but in Ch. Graminis, (which ought probably to be separated from the rest as a distinct genus) they are entire, and the palpi are somewhat dissimilar in their proportions: the

antennæ of the male *Ch. cespitis* and *confinis* are obviously different in their pectinations from those of the remaining species of the genus; and their wings are rather broader and less sensibly denticulated.

Sp. 1. *cespitis*. *Alis anticis nigro-fuscis, strigis tribus undatis albidis nigro adnatis.* (Exp. alar. 1 unc. 4—7 lin.)

No. *cespitis*. *Wien. V.*—*Ch. cespitis*. *Steph. Catal. part ii. p. 64. No. 6073.*

Head and thorax deep fuscous, irrorated with cinereous: anterior wings of a brownish-black, with an obscure abbreviated ashy striga at the base; behind which, nearly adjoining the anterior stigma, is a slightly waved whitish transverse one, margined exteriorly with black; and beyond the posterior stigma is an arcuated one, black interiorly and whitish exteriorly; between which and the hinder margin is an undulated striga of a paler hue: on the hinder margin itself is a series of minute fuscous spots, some of which are accompanied by whitish dots interiorly; and on the costa, towards the apex, are three or four minute whitish spots: the posterior wings are grayish-white at the base, and a little clouded with dusky towards the margin, with an obscure striga of fuscous spots, placed transversely a little beyond the middle. The female differs in having the posterior wings ashy-brown, with a darker margin.

Caterpillar brownish, with three paler longitudinal lines:—it feeds on grasses.

Not common; taken occasionally in the lanes near Bexley, and on Dartford-common, in September.

Sp. 2. *confinis*. *Alis anticis obsoletè denticulatis fusco-cinereis, strigis duabus nigricantibus, unâque albidâ.* (Exp. alar. 1 unc. 5 lin.)

Ch. confinis mihi.—*Steph. Catal. part ii. p. 54. No. 6074.*

Head and thorax grayish-ash, slightly mixed with fuscous: anterior wings pale ashy-brown, with a transverse dusky striga anterior to the basal stigma, and a second greatly arcuated one immediately adjoining the posterior stigma; between which and the hinder margin is an undulated striga, composed of whitish lunules; the hinder margin immaculate: the space between the stigmata and behind the posterior one blackish: posterior wings ashy-white, very obscurely tinted with dusky towards the costal angle of the hinder margin.

The paler colour and narrowness of the anterior wings, nearly uniformly coloured posterior wings, and slightly pectinated antennæ, distinguish this from the foregoing species.

The only specimen I have seen of this insect I obtained from Mr. Marsham's cabinet. I am not aware of its locality.

Sp. 3. *fusca*. *Alis anticis fusco-nigris, fasciâ subtriangulari mediâ saturatiore, strigâque posticâ obsoletè pallidiore; posticis maris albidis, fœminæ fuscis.* (Exp. alar. 1 unc. 4—7 lin.)

Bo. fuscus. Haworth.—*Ch. fusca.* Steph. *Catal. part ii. p. 64. No. 6075.*

Head and thorax of a deep fuscous-black; anterior wings deep brownish-black, with a griseous tinge, having an obscure subtriangular fascia in the middle, visible only in certain lights, greatly attenuated towards the inner margin, and obscurely bordered on each side with a paler striga; the stigmata are very obsolete, and placed in the fascia, the anterior being ovate or rounded, and the posterior reniform, with one or two palish spots on the margin; between the latter and the hinder margin is an undulated repanded striga of an ashy or pale griseous hue; and on the costa, near the tip, are four or five distinct whitish spots: the posterior wings are clear immaculate white in the male, fuscous, with a darker margin, in the female. Antennæ pale ferruginous, rather dusky in the female.

Var. β . *Ch. consimilis.* Steph. *Catal. l. c. No. 6076.*

Female with the anterior wings nearly of an uniform pale cinereous, the stigmata and fasciæ being only visible in certain lights.

† Var. γ . *Ch. orthostigma.* Steph. *Catal. l. c. No. 6077.*

Female, with the stigmata rather flavescent and distinct, the anterior one rounded, the posterior straight anteriorly, and bounded on the hinder margin with a few whitish spots: the posterior wings very deep fuscous.

I have no doubt that the above varieties belong to this rare species, which is probably the *Noctua lutulenta* of Hübner, so far as I can ascertain by Ochsenheimer's description.

Var. β . is smaller than either of the others; and var. γ . appeared to be distinct in Mr. Stone's cabinet; but upon comparison with my own specimens, I am of opinion that it is a mere variety, which is further corroborated by the locality of the specimen.

All the above described specimens were taken during the month of September, in different years, near Birch-wood.

Sp. 4. *nigra.* PLATE 20. f. 1.—*Alis anticis nigris fasciâ latâ saturatiore, stigmatibus ferè oblitteratis, postico margine externo flavescenti; posticis maris albis nigro marginatis, feminae fuscis.* (Exp. alar. 1 unc. 8—10 lin.)

Noctua nigra. Haworth.—*Ch. nigra.* Steph. *Catal. part ii. p. 64. No. 6078.*

Head and thorax black: anterior wings deep black, obviously denticulated on the posterior margin, with a broad subtriangular darker fascia in the middle, in which are the usual stigmata, but very obsolete, and the posterior one has the outer margin yellowish; in the fascia towards the inner margin of the wing is a longitudinal darker line; towards the hinder margin of the wing, and in the margin itself, are a few obscure yellowish spots, and near the apex of the costa are three or four whitish ones: the posterior wings in the male are whitish, with the margin dusky; the abdomen is whitish at the base and dusky at the tip; the female has the abdomen uniformly dusky, and the posterior wings dusky-ash, with the margin darker. Antennæ of the male black, with whitish radii.

This rare species, which is the *Ag. Æthiops* of Ochsenheimer, (*Noctua nigricans* of Hübner) is in very few cabinets. I obtained my specimen from that of the late Mr. Francillon.

I have known this insect to have been twice captured in the wood upon Shooter's Hill, in June: it has also occurred in Devonshire. "Cumberland."—*T. Marshall, Esq.*

Sp. 5. Graminis. *Alis anticis fusco-griseis lineâ trifurcâ albâ, stigmatibus pallidis lineolisque ad apicem atris.* (Exp. alar. 1 unc. 2—6 lin.)

Ph. Bo. Graminis. *Linné.—Don. xiii. pl. 458.—Ch. ? graminis. Steph. Catal. part ii. p. 64. No. 6079.*

Head and thorax pale griseous-brown; anterior wings the same, with a longitudinal whitish line reaching from the base to beyond the middle, and giving off three branches in the direction of the nervures towards the anal angle: between this and the costa the stigmata are placed; these are of a pale luteous, with the margin paler; the space between and on the margin is dusky; on the inside of the longitudinal line is an elongate lutescent stigmatiform spot, bordered towards the inner edge of the wing with black; beyond the ordinary stigmata, towards the hinder margin, is a repanded striga of somewhat acute black streaks: the posterior wings are fuscous, with the margins darker and the cilia yellowish: the body is fuscous, and the antennæ ferruginous.

In some examples, the row of black streaks toward the hinder margin is nearly obliterated: others have the anterior wings, with the exception of the stigmata and trifurcate line, of an uniform colour; while others have the space between the stigmata, and on the hinder margin, deep fuscous: others, again, have the stigmata edged with deep black on a plain ground: in fine, it is a most variable species.

Caterpillar fuscous with yellowish streaks on the sides and back:—it feeds on various grasses, but, according to Linné, not upon the *Alopecurus*; towards the end of June it changes to a brown shining pupa, and the imago appears in about a fortnight.

Rare in the south of England, but more abundant in the northern districts; it has been taken at Coombe-wood, and Whittlesea-mere, and in Devonshire.

GENUS XC.—RUSINA *miki*.

Palpi ascending, densely squamous, with the terminal joint exposed, rather elongate, composed of three somewhat slender joints, the terminal one being most slender: the basal joint about half the length of the second and a little curved, the terminal one one-third the length of the preceding, elongate, obtuse: *maxillæ* moderate. *Antennæ* deeply bipectinated in the males, the pectinations suddenly abbreviated towards the apex, ciliated in the females:

head small, pilose; *thorax* not very stout, clothed with loose hair-like scales, subcrested: *wings* horizontal, entire; the *anterior* elongate, subtrigonal, narrowed at the base, with the shoulder a little rounded; *posterior* orbiculate-triangular, slightly excised towards the costa: *body* slender, tufted at the apex in the males: *legs* short, robust. Caterpillar subterranean: pupa short, spinose at the apex, subterranean.

The deeply bipectinated antennæ of the males, and ciliated ones of the females, with the slenderness of their bodies, and the rotundity at the shoulder of their broad anterior wings, distinguish this genus from the cognate genera, exclusively of the difference in the position, form, slenderness and proportions of the palpi.

Sp. 1. ferruginea. *Thorace alisque grisco-ferrugineis, anticis strigis quatuor denticulatis, maculisque costalibus aliquot pallidis.* (Exp. alar. 1 unc. 6—8 lin.)

Bo. ferruginea. *Esper.*—Ru. ferruginea. *Steph. Catal. pt. ii. p. 64. No. 6080.*

Head and thorax rusty-griseous: anterior wings the same, with two obscure dusky spots at the base; a slightly denticulated transverse striga near the anterior stigma, and another much bent towards the costa behind the posterior one, with a broader one between the stigmata, which are very obscure, and a similar but considerably undulated one near the hinder margin, bordered exteriorly with grayish; the costa, at the origin of the first, third, and fourth striga, is pale griseous-ash, and between the latter bears three distinct pale spots: the posterior wings fuscous, with an interrupted dusky streak on the hinder margin. Female somewhat darker, with the denticulated strigæ more obscure, and the abdomen stouter.

Caterpillar dusky-brown, with the head paler, with a yellowish dorsal and pale lateral lines; the latter with a few black spots: pupa rufous: the imago appears towards the end of June.

I am not aware of any other locality for this obscure but remarkable insect, than the hedges in the vicinity of Darent-wood, where I have twice captured it.

GENUS XCI.—AGROTIS, *Hübner*.

Palpi ascending, stout, the basal joints thickly clothed with long scales, the terminal distinct, slightly squamous; triarticulate, the two basal joints of equal length, the first curved, and the second slightly attenuated; the terminal small, subovate, obliquely truncate: *maxillæ* elongate. *Antennæ* bipectinated at the base and setose at the apex in the males, simple and pubescent beneath in the females: *head* small, thickly clothed with scales: *thorax* densely squamous, not crested: *wings* horizontal during repose; *anterior* elongate, with the hinder margin entire; *posterior* broad, not denticulated. *Larva* subterranean, naked, radicivorous: *pupa* subterranean.

The species of this extensive genus differ exceedingly in appearance; nevertheless, from their habits being similar, and their structure varying but slightly, I have not attempted to disunite them; neither have I ventured to subdivide the genus into sections, as the distinctive characters vary in the respective sexes: it may, however, be remarked, that the males of the seven first species have the antennæ more deeply pectinated than the remainder, with the terminal joints frequently simple. In common with all the foregoing Noctuidæ, and many of the following genera, the individuals repose with their wings incumbent or horizontal, as noticed under each genus; a character which can only be used as secondary, for if it be employed in a primary view*, such discordant genera as the present, and *Leucania*, must be unnaturally associated together, while *Semiophora* would be placed in a distinct subdivision from *Graphiphora*, to which it is so closely allied, that Treitschke and others unite both under the latter genus.

Without some practical acquaintance, both with regard to their localities and periods of flight, it would be hopeless to attempt the separation of all the numerous varieties of the respective species, or place them with their legitimate partners, as their markings are not only extremely similar, but many of the species are so prone to vary; and they are, moreover, in general, of dull and sombre colours, usually with three stigmata on each of the anterior wings. Many of the species may be occasionally remarked flying, as if by chance, in the afternoon; but they all fly at twilight, and some throughout the night; their larvæ are naked, more or less spotted with black, and radicivorous, and are consequently but seldom observed.

Sp. 1. *lunigera*. PLATE 20. f. 2. *Alis anticis fuscis, flavescente variegatis, strigis duabus geminatis nigricantibus, stigmâ anticâ internè flavescente; posticis luteo-albis.* (Exp. alar. 1 unc. 8 lin.)

Ag. *lunigera mihi*.—*Steph. Catal. part ii. p. 65. No. 5081.*

Head deep fuscous; thorax the same, varied with yellowish, with a large spot of the latter colour on each side at the base of the wing: anterior wings rich fuscous, varied with yellowish, with an angulated black streak at the base, united to an abbreviated pale striga; behind this, at a distance from the an-

* As done by Fabricius, in 1775, and subsequently by Gmelin, Turton, Stewart, &c., alluded to by me in page 87, in February last, and published as an *unnoticed character* within the past month.

terior stigma, is a transverse yellowish waved striga, bordered on each side with dusky, and very much angulated towards the inner margin; a similar striga arises from the costa, opposite to the posterior stigma, and, bending outwards, turns rather suddenly towards the inner edge, the space between the arch and the stigma being yellowish, or dull ochraceous-brown; near the hinder margin is a pale waved streak, and the margin itself is spotted with black, with a pale griseous line at the base of the cilia: the anterior stigma is dusky towards the costa, and bright flavescent towards the inner margin of the wing, forming a lunule of the latter colour; the posterior stigma is margined anteriorly with black and flavescent, and posteriorly with black: the body is pale fuscous, and the posterior wings of a creamy-white, with the nervures rather dusky.

I have seen but three specimens of this very distinct and prettily variegated insect, which, so far as I can ascertain, does not appear to have been noticed by entomological writers: they were taken in June, 1826, near Cork, in Ireland, and I believe the species has not yet occurred in Great Britain. I am indebted to my friend Mr. Stone for the specimen from whence the accompanying figure was designed.

Sp. 2. *Corticea*. *Alis anticis cinereis fusco irroratis, stigmatibus ordinariis atris, thorace fusco, griseo vel albo vario, alis posticis in utroque sexu cinereis.* (Exp. alar. 1 unc. 4—8 lin.)

No. *Corticea*. *Hübner*.—Ag. *Corticea*. *Steph. Catal. part ii. p. 65. No. 6082.*

A most variable species: antennæ ferruginous: head dusky, varied with grayish: thorax also dusky, varied with griseous or whitish: anterior wings cinereous, more or less dusted throughout with fuscous, with the ordinary stigmata deep fuscous or black; towards the base is a geminated fuscous striga, and a second curved one behind the posterior stigma: the posterior wings are cinereous in both sexes, with a central lunule, the nervures and margin darker.

Var. β . Anterior wings deep fuscous, irrorated with black, with the stigmata externally dark; the thorax fuscous, streaked with white.

Var. γ . The anterior wings of an uniform pale griseous-fuscous, slightly dusted with dusky, the stigmata deep brown.

Var. δ . The anterior wings with a black fascia at the base, edged on each side with pale fuscous, the centre of the wing pale cinereous, with the hinder margin dusky, the stigmata with dark margins, the anterior having a black pupil.

It is difficult to find two specimens perfectly similar; in some the stigmata are remarkably large and distinct, in others they are but slightly darker than the wings; in some the teliform one is slender and elongate, in others abbreviated and stout.

Not common, but very widely dispersed: I have taken it near Hertford, Ripley, Brighton, and Dover, and have obtained spe-

cimens from Devonshire and Norfolk. “Netley, Salop.”—*Rev. F. W. Hope.*

Sp. 3. æqua. *Alis anticis griseo-cinereis, stigmatibus subobliteratis, maculâ apicis pallidiore; posticis subalbidis tincturâ violacei, margine postice nigricante.* (Exp. alar. 1 unc. 10 lin.—2 unc.)

No. æqua. *Hübner?*—Ag. æqua. *Steph. Catal. part ii. p. 65. No. 6083.*

Thorax fuscus: anterior wings clouded griseous-ash, with a double series of black spots, as in the following insect; between which are placed the usual stigmata, which are nearly obliterated; towards the apex is a paler or yellowish spot: the posterior wings are dusky-white, tinged with violet, with the nervures and the hinder margins, especially towards the anal angle, fuscous.

Var. *β.* *Steph. Catal. l. c.* Anterior wings pitchy-black or deep fuscous; the posterior smoky-white, tinged with violet, with the nervures and hinder margin as in Var. *α*, but nearly black.

This rare species, as we learn from *Lepidoptera Britannica*, was first detected in this country by Mr. Hatchett: it has since been taken by Messrs. Raddon and Stone near London. The late period of its appearance (September and October) is probably the reason why so few examples have occurred: it is evidently very variable, like the cognate species *Corticea*, *Segetum*, and *suffusa*. I possess a specimen captured in Hertfordshire. “Several examples taken near Epping in 1827, by me.”—*Mr. H. Doubleday.*

Sp. 4. *Segetum.* *Alis anticis griseo-ferrugineis strigis undatis obscurioribus, posticis albidis.* (Exp. alar. 1 unc. 6—11 lin.)

No. *Segetum.* *Wiener Verz.*—Ag. *Segetum.* *Steph. Catal. part ii. p. 65. No. 6084.*

Head and thorax pale fuscous or griseous-brown: anterior wings the same, with an abbreviated pale striga at the base, bounded on each side with dusky; a similar undulated one before the stigmata, a third, more or less arcuated, and varying considerably, being sometimes moniform (1), at others resembling a comb with the pectinations outwards (2), occasionally placed in immediate contact with the reniform stigma (3), at others at a distance (4); and finally, towards the hinder margin, a waved band, composed of lunular pale spots, on a darker ground: the abdomen pale ashy-brown; the posterior wings white, with the nervures slightly fuscous. The female (5) is usually darker, and the posterior wings are of a bluish-white, with the hinder margins and nervures dusky.

Both sexes vary amazingly, and it is nearly impossible to obtain two specimens

(1) *Noctua monilea*, *Haworth.*

(2) *No. pectinata*, *Haw.*

(3) *No. catænata*, *Haw.*

(4) *No. spinula*, *Haw.* Ag. *affinis mihi olim.*

(5) *No. nigricornuta*, *Haw.*

precisely similar: in some males the anterior wings are of a hoary-ash, in others almost black (6), and all intermediate gradations; the costa is sometimes of a darker hue than the inner edge of the wing, and spotted with pale flavescent at the origin of the strigæ; at others the wing is of an uniform tinge. Again, the stigmata not only vary in shape, but in number, one or more being occasionally obliterated; and sometimes all become obsolete; the anterior one is generally dark in the centre, and either round, subovate, or ovate-acute (7), and is frequently united to the posterior one by two black streaks (8), or to the second striga by a black line; the reniform one is generally dusky in the centre, with a paler margin; and the third, or teliform stigma, varies exceedingly in length, stoutness, and intensity: the nervures are sometimes dilated, and brown (9), and the centre of the wing between the stigmata has occasionally a broad angulated dusky fascia: finally, the males are found of the dark hue of the females, and vice versâ.

Caterpillar fuscous, with paler dorsal and lateral lines, with four or five black spots on each segment: it is found at the roots of corn, and changes to a dusky-brown pupa towards the end of May, and in the following month the imago appears.

Probably the most variable of the British Noctuidæ, scarcely two specimens occurring precisely alike, and their discrepancies being occasionally so considerable as to induce Mr. Haworth to describe several as distinct species, in the early pages of his valuable *Lepidoptera Britannica*; a mistake which he has very properly corrected in the concluding part, as there can be no doubt of all being referrible to one inconstant species, which is a great pest in several districts, and abounds to a most destructive extent in certain years; the larvæ doing incalculable mischief by destroying the young corn, insidiously devouring the roots and base of the plant, while the blade is left untouched. In the autumn of 1826, and the succeeding spring, the larvæ abounded, and in June following the imago actually swarmed, in the neighbourhood of Ripley, the hedges for nearly three weeks being literally alive with their multitudes, as I found to my loss, while mothing. About the same period the lands in the neighbourhood of Barham, in Suffolk, were similarly visited, and the Rev. W. Kirby told me that several bushels of the larvæ were destroyed by Mr. Rodwell.

Sp. 5. *suffusa*. *Alis anticis griseis fusco-nebulosis, ant. fuscis, apice pallidioribus, lineolâ mediâ duabusque apicis puncto albo notatis atris.* (Exp. alar. 1 unc. 9 lin.—2 unc.)

(6) No. *subatrata*, Haworth.

(8) No. *connexa*, Haw.

(7) No. *Corticea*, Haw.

(9) No. *venosa*, Haw.

No. suffusa. *Wien. Verz.*—Ag. suffusa. *Steph. Catal. part ii. p. 66. No. 6085.*—*Ph. Bo. spinula. Don. x. pl. 345. f. 2, 3.*

Head and thorax fuscous; anterior wings griseous, clouded with fuscous towards the costa, with a very obsolete geminated dusky striga towards the base, to which the teliform stigma is united, as in its congeners, and a second very slightly bent behind the stigmata; on the hinder margin is an irregular fuscous band, anterior to which are two elongate-trigonal lineolæ, whitish at the base interiorly, and black at the apex: the anterior stigma is dusky in the centre, with a black margin; the posterior dusky, margined anteriorly with griseous and black, and posteriorly with black, having an elongate-acute black spine-like streak pointing to the hinder margin: posterior wings whitish, with a violaceous tinge, with the nervures and marginal lines dusky.

Var. β . *Steph. Catal. l. c.*—Anterior wings very dark fuscous, with a cloud at the base, and the hinder margin pale griseous-ash, the stigmata nearly obliterated, but the spine-like process to the posterior stigma, and the acute lineolæ towards the hinder margin, as usual: posterior wings with the nervures very dark fuscous.

Caterpillar ashy-gray; found at the roots of grass in May, and changing towards the end of the month to a brownish pupa: the imago appears in June and July.

Found occasionally at Birch and Darenth woods in July: but I am not aware of any other locality. "Very common in June and September, near Epping, in some seasons."—*Mr. H. Doubleday.*

† Sp. 6. annexa. *PLATE 22. f. 2. Alis anticis griseo-fuscis, costæ basi marginæ postici pallidioribus, stigmatibus lineolâ nigrâ conjunctis.* (Exp. alar. 1 unc. 8 lin.)

Ag. annexa. *Ochsenheimer.*—*Steph. Catal. part ii. p. 66. No. 6086.*

Head and thorax pale griseous-brown, anterior wings with a broad marginal band of the same hue reaching to the posterior stigma, the rest of the wing of a deeper brown, with the hinder margins rather paler; at the base, dividing as it were the two colours, is a longitudinal dusky streak; and on the hinder margin are two or three lineolæ of a similar colour; the anterior stigma is pale, with a dusky centre, and the posterior rather slender, also dusky in the centre, with a pale margin; they are connected together by a broad black fasciola; the teliform stigma is rather obsolete, and behind the posterior one is an arcuated striga of pale spots: the posterior wings are pearly white, with the nervures and margins slightly fuscous.

Of this remarkably distinct species*, three specimens only have

* The *Noctua subterranea* of Haworth, but not of Fabricius, which is a native of South America, and evidently very distinct. Without entering into the broad question of specific distinctions, which I have elsewhere discussed, I may

come beneath my observation; the first was found nearly thirty years since, by Mr. Hatchett, in the neighbourhood of London; but unfortunately his specimen was accidentally destroyed: the second was taken in June, 1817, by the late Mr. Blunt, near West Ham, in Essex: and the third (whence the accompanying figure was obtained) occurred near Cork, in June, 1826, and is in Mr. Stone's rich cabinet of Lepidoptera.

Sp. 7. *valligera*. *Alis anticis griseo-fuscoque variis, macullâ oblongâ baseos nigricante, puncto-ocellari ferrugineo.* (Exp. alar. 1 unc. 4—8 lin.)

No. *valligera*. *Wien. V.*—*Ag. valligera*. *Steph. Catal. part ii. p. 66. No. 6087.*

Ph. Bo. clavis. Don. x. pl. 340. f. 2.

Head griseous, varied with white; thorax anteriorly griseous, with two transverse dusky lines, and two whitish ones, and the back griseous mixed with white; the petagiæ white, with griseous borders: anterior wings pale griseous, varied with fuscous, the costa spotted with white; in the middle of the base is a black spot, adjoining to which, on the inner edge, is an ocellated ferruginous patch, with a pale iris, from which the teliform stigma, which is very stout and dusky, with a darker margin, arises; between this and the costa following the discoidal nerve is a broad whitish streak; the anterior stigma is small, rounded, with a dusky pupil, and edged with black; the posterior is dusky, margined with black and white, with a small spine-like black lineola on the hinder edge; on the hinder margin is a striga of arrow-shaped black lines, and a whitish one behind, very much waved, with a mark towards the anal angle resembling the letter W: the fringe is pale at the base and brown at the tip: the posterior wings are white in the male, and dusky, with a darker margin, in the female

Var. *β*. Anterior wings darker, without the spiniform process to the posterior stigma.

Like its congeners, this beautiful species varies greatly. In some examples the ground colour is of a beautiful leaden- or bluish-gray, and the usual markings are greatly suffused:—in others the colour is lighter, with faint markings.

Caterpillar ashy-gray, with a brown head, each segment with four black spots: it feeds on grass: the imago appears in August.

A scarce species; it occurs, however, in very remote parts of the

here take occasion to remark upon the importance of attending to minute differences in the examination of specimens from distant parts: if the British specimens of *Ag. annexa* had been strictly examined with those of *No. subterranea*, their distinction would soon have been evident, and an error in the geographical station of the species would not have been committed, and have remained uncorrected till now, although the genus has been recently investigated in this country.



country, having been captured in the neighbourhood of London; in Norfolk, &c. "Teignmouth, Devon."—*Rev. W. T. Bree*. "Dublin."—*Rev. J. Bulwer*. "Glamorganshire."—*Mr. J. Mil-lard*. "New Forest."—*A. Cooper, Esq.*

Sp. 8. radia. *Alis grisescentibus maculâ quadratâ bascos fimbriâque saturatioribus, in quâ strigâ pallidâ punctorum sagittatorum.* (Exp. alar. 1 unc. 4 lin.)

Bo. radius. *Haworth*.—Ag. radia. *Steph. Catal. part ii. p. 66. No. 6089.*

Antennæ griseous: thorax slightly crested, griseous: anterior wings pale fuscous, with three stigmata, of which the two anterior are small and shuttle-shaped, the exterior large and teliform: the costal edge is spotted with brown and dotted with white: the posterior wings are whitish.

Closely allied to the following species, of which I suspect it is a mere variety.

Taken near London; also in the New Forest, and in Derbyshire. "Devonshire."—*Rev. J. Yonge*.

Sp. 9. radiola. PLATE 20. f. 3. *Alis anticis cinereo-griseis maculâ quadratâ bascos alterâque pone medium fuscis, stigmâ anteriore elongato utrinque acuto; aut nigro-fuscis maculâ costali pallidâ.* (Exp. alar. 1 unc. 2—4 lin.)

No. radiola. *Haworth MSS.*—Ag. radiola. *Steph. Catal. part ii. p. 66. No. 6089.*

Antennæ griseous; head and palpi ashy: thorax ashy, with a griseous lateral line, and a black transverse one in front: anterior wings pale ashy-griseous, with a large quadrate dusky or brown patch at the base, and a spot of a similar hue behind the middle, on the costa; on the margin of the basal patch is a geminated dusky striga, and behind the posterior stigma is a second, composed of black dots, or lunular spots; between these the stigmata are placed, the anterior of which is very slender and acute at each extremity, very pale cinereous, with a darker centre; the reniform one is dark fuscous, and the inner or teliform one is extremely minute; the hinder margin of the wings is a little dusky, with a row of distinct whitish spots: the posterior wings are white, with dusky nervures. The female has the anterior wings deep fuscous, with a pale cloud towards the middle of the costa, and the posterior dusky, with a darker central lunule.

A rare species; found occasionally in St. James's and Greenwich Parks, in June; it also occurs in Norfolk. "Devonshire."—*Rev. J. Yonge*.

Sp. 10. sagittifera. *Alis anticis griseis, albido nebulosis, lincolâ baseos alterâque infrâ maculas ordinarias atris, sagittiformibus; posticis albis.* (Exp. alar. 1 unc. 5 lin.)

No. sagittifera. *Hübner?*—Ag. sagittifera. *Steph. Catal. part ii. p. 66. No. 6090.*

Head and thorax griseous, mixed with white: anterior wings griseous clouded

with white, with a longitudinal black arrow-shaped line at the base; the anterior stigma is rather elongate-ovate, whitish, with the centre pale ashy-brown; the posterior griseous in the centre, margined with dusky and white; the space between, as well as at the base of the anterior stigma, deep fuscous; the teliform stigma is rather elongate, and has a slender black streak extending from it; on the hinder margin is an angulated pale striga, having a few dusky wedge-shaped lineolæ within; the margin itself has a row of minute black dots; on the costa, near the apex, is a fuscous spot, in which are three white dots: the posterior wings are whitish, with the margins dusky. The male has the posterior wings milk-white.

My specimens of this species were taken in the neighbourhood of London.

Sp. 11. *vitta?* *Alis anticis rufescente-subfuscis, margine crassiori, stigmatibusque albidis, strigâque posticâ lineolarum nigrarum.* (Exp. alar. 1 unc. $4\frac{1}{2}$ lin.)

No. *vitta.* *Hübner?*—Ag. *lineolata.* *Steph. Catal. part ii. p. 66. No. 6091.*

Allied to the foregoing, but smaller: head and thorax reddish-brown; the latter with one or two pale transverse streaks in front: anterior wings also reddish-brown, with the costa from the base to beyond the middle whitish, its extreme margin being however dark-brown, interrupted with whitish; the central nervure of the wings is whitish from the base to its union with the reniform stigma, which is also whitish, with the middle ashy; in common with the anterior one; between the stigmata is a quadrate dusky spot, and a triangular one of similar colour at the base of the anterior one; the inner or teliform stigma is very small and sometimes wanting: it arises from a pale transverse waved striga; the hinder margin is clouded with cinereous, with one or two dusky longitudinal streaks, an undulated whitish striga, and a row of small wedge-shaped spots on the extreme edge; the cilia ashy: male with the posterior wings whitish, with a dusky fimbria; of the female dusky, with the base cinereous.

This species varies much: in some examples the anterior wings are nearly all fuscous, with merely a vestige of the whitish costa and longitudinal streak; others have them more or less strigulated with whitish at the base, and some are destitute of the posterior undulated striga: and others have the margin behind the transverse striga deeper in colour than the rest of the wing.

Caterpillar gray and shining; found beneath stones in June.

Rare; but occurring in the metropolitan district:—I have taken it at Darenth-wood, about the middle of August. “Near Dublin, not unfrequent.”—*Rev. J. Bulwer.*

Sp. 12. *pupillata.* *Alis fuscescentibus stigmatibus ordinariis subocellatis, stigmatæque tertio teliformi sesquialtero.* (Exp. alar. 1 unc. 5 lin.)

No. *pupillata.* *Haworth.*—Ag. *pupillata.* *Steph. Catal. part ii. p. 66. No. 6092.*

Rather larger than the last: head and thorax as in that insect: anterior wings

brownish, with an abbreviated transverse striga at the base, an undulated one before the middle, and an arcuated one behind, cinereous, margined with dusky or black; and on the hinder margin is an undulated one, with a conspicuous angle at the costa, and two towards the middle of the hinder margin; the space between the second and third strigæ is rather paler than the rest of the wing, and bears the usual stigmata, of which the two ordinary ones are cinereous, with the centre dusky, and the third dusky, with the margin black: near the base of the wing is a dusky spot, and a few streaks of the same hue appear towards the middle of the posterior undulated striga; and the posterior of the wing behind the latter is nearly of an uniform brown; cilia brown; posterior wings cinereous, with the hinder margin deepest; in the male rather whitish at the base.

The stigmata are sometimes rufescent, with the centre dusky:—I possess one specimen, which may belong to a distinct species, with the usual stigmata very large and rufescent, and having a large dusky-ferruginous subocellated spot at the base of the inner margin of the anterior wings, as in *Ag. valligera*.

Found near London in July, but very rarely: also in Devonshire and at Whittlesea-mere.

Sp. 13. *aquilina*. *Alis anticis cinereis nigro strigosis, costâ basi nigro, apice albo-punctatâ; posticis maris albidis*. (Exp. alar. 1 unc. 5 lin.)

No. *aquilina*. *Wien. V.*—*Ag. aquilina*. *Steph. Catal. part ii. p. 66. No. 6094.*

Closely allied to the two last: the anterior wings cinereous, with three transverse waved black strigæ, between the two posterior of which the stigmata are placed, the anterior of which is rather elongate-ovate, dusky-brown in the centre, with a cinereous margin, the posterior the same, but with an outer black edge; on the hinder margin is an undulated whitish, or cinereous striga, and the extreme edge bears a row of minute black dots; the costa is spotted with black at the base, and with white towards the tip; the posterior wings of the male are whitish, of the female ashy, with the base palest.

This varies in the colour and intensity of the wings and markings.

Caterpillar cinereous, sprinkled with dusky on the sides, the head reddish: it feeds on the Bed-straw (*Galium verum*).

Not common: found occasionally in the neighbourhood of London, and in Glamorganshire: about the middle of July.

Sp. 14. *Tritici?* *Alis anticis cinereis stigmatibus ordinariis pallidioribus unâque nigricante, posticis maris albidis margine fuscescente*. (Exp. alar. 1 unc. 4—5 lin.)

Ph. No. *Tritici*. *Linné?*—*Ag. Tritici?* *Steph. Catal. part ii. p. 67. No. 6094.*

Size of the last, which it greatly resembles: anterior wings cinereous, sometimes a little tinged with reddish; with a short dusky streak at the base, which is slightly paler than the rest of the wing, a faint transverse ashy striga before the anterior stigma, and a curved one behind the posterior, as in the last in-

sect; the stigmata are large and pale ash; the anterior one is round, and the space between them is sometimes dusky; the third stigma is dusky, with a black edge; on the hinder margin is a slightly varied palish striga; the margin itself has a row of minute black spots; the fringe is pale-brown: posterior wings of the male whitish, with the margin brownish; of the female pale-ashy, with the margin dusky: abdomen pale cinereous.

As in the rest of the genus, scarcely two specimens occur precisely similar.

Caterpillar pale gray, with paler longitudinal lines: it feeds on corn in May, and the imago appears in June or July.

Decidedly an uncommon species, especially near London. "Whittlesea-mere in July last."—*Mr. Weaver*.

Sp. 15. *Hortorum*. *Alis anticis cinereo-nigricantibus, stigmatibus ordinariis rufescentibus nigro-marginatis, posticis fuscescentibus, margine venisque saturioribus*. (Exp. alar. 1 unc. 4—5 lin.)

Ag. *Hortorum mihi*. *Steph. Catal. part ii. p. 67. No. 6098*.

Closely resembling the last: anterior wings deep dusky-ash, with four transverse paler strigæ, the three anterior of which are edged with dusky, placed nearly as in that insect, but the posterior one is less undulated, and has a row of elongated dusky or black streaks attached to the anterior edge as in *A. cuneigera*: on the hinder margin is a row of minute black spots: the usual stigmata are faintly rufescent, margined with black, the third is very slender, and the black margins alone are visible: the posterior wings are fuscous, with the nervures and margin darker: body deep fuscous.

The darker posterior wings and brown abdomen at once distinguish this from the preceding, unless it should prove to be a mere suffused variety, which I think probable.

The only specimens I have observed of this species were taken in August last, at Whittlesea-mere: they seem very distinct from the preceding species, which they most resemble.

Sp. 16. *ocellina*. *Alis anticis nigricantibus, vittâ longitudinali abbreviatâ cinerascanti, maculis duabus atris, striâ arcuatâ alterâve posticâ dentatâ, cinerascantibus*. (Exp. alar. 1 unc. 3—4 lin.)

No. *ocellina*. *Wien. V.—Ag. ocellina. Steph. Catal. part ii. p. 67. No. 6095*.

Somewhat less than the foregoing: anterior wings dusky, or rufescent, with a pale abbreviated longitudinal streak at the base; an undulated black transverse striga before the anterior stigma, an incurved pale one behind, and a dentated one near the hinder margin, the latter accompanied anteriorly with some black streaks; the stigmata slightly rufescent in the middle, with a narrow pale-ashy margin: fringe rufescent: posterior wings dusky, with the base cinereous in both sexes, palest in the male.

Also a variable insect, but less so than its congeners.

Once captured at Darenth-wood, and I believe a single specimen

has occurred in the New Forest. “Near Dublin.”—*Rev. J. Bulwer.*

Sp. 17. *cuneigera*. *Alis anticis rufo-fuscis stigmatibus tribus strigisque posticâ cuneorum fusciorum.* (Exp. alar. 1 unc. 3—5 lin.)

No. *valligera*. *Haworth.*—Ag. *cuneigera*. *Steph. Catal. part ii. p. 67. No. 6096.*

Size of the last: anterior wings reddish-brown, or dusky-ash, with a pale streak towards the base of the costa; and four obsolete transverse strigæ, the first at the base, very stout, the second immediately anterior to the basal stigma, the third adjoining the posterior stigma, much bent, and the last, slightly waved towards the hinder margin, accompanied by a series of acute wedge-shaped fuscous spots: the ordinary stigmata are pale, with a dusky spot adjoining the base of the anterior one; and sometimes with a quadrate black one between them; the teliform stigma is variable in size, and has usually a black edge: the male has the posterior wings whitish, with the margins and nervures dusky, the female cinereous, with a darker margin and nervures; in other respects she resembles the male.

The form of the stigmata varies much, especially that of the anterior one, being round, ovate, elliptic, and subtriangular: the tinge of colour also varies.

Far from abundant near London; and I believe equally scarce in other parts of the country. I have met with it at Darentwood in the beginning of July. “Chelsea.”—*N. A. Vigers, Esq.*

Sp. 18. *venosa*. *Alis anticis griseo-fuscis, strigis tribus cinerascensibus unâque postice pallidiore, venis griseo-cinerascensibus; posticis maris cinereis, venis saturatioribus.* (Exp. alar. 1 unc. 5 lin.)

Ag. *venosa mihi.*—*Steph. Catal. part ii. p. 67. No. 6097.*

Allied to the last, but abundantly distinct: anterior wings griseous-brown, with three transverse cinerascens strigæ, edged with dusky, placed nearly as in the foregoing insect, but the posterior one remote from the reniform stigma; the hinder margin has also a waved whitish streak, which arises from a dusky spot on the costa, and is bounded posteriorly with ashy-brown, but is destitute of any wedge-shaped accompanying streaks; the usual stigmata are ashy-brown in the centre, with a slender pale margin, the teliform one is obliterated, and the nervures of the wing are pale griseous-ash: the posterior wings of the male are cinereous: the abdomen of the same colour, with the base whitish.

The second transverse striga is much more undulated than in the foregoing insect; and the male is easily known by its dark-coloured posterior wings.

Taken near Edinburgh in July 1824 by the late Mr. Blunt, to whom I am indebted for my specimen.

Sp. 19. *nigricans*. *Alis anticis nigricantibus, stigmatibus tribus pallidioribus, strigâ posticâ punctorum alborum.* (Exp. alar. 1 unc. 3—6 lin.)

Ph. No. *nigricans*. *Linné.*—Ag. *nigricans*. *Steph. Catal. part ii. p. 67. No. 6099.*

Anterior wings dusky, with three obscure pale, transversely waved, strigæ, margined with brownish or black, and an undulated streak of whitish spots on the hinder margin; the ordinary stigmata are pale with a darker edge, the posterior one is sometimes obliterated, and the teliform one is nearly indicated by its black margin: the posterior wings are whitish, with the margin, or lunule, in the middle, and the nervures dusky.

Var. β . *Steph. Catal. l. c.*—With the anterior wings pale immaculate reddish, the posterior whitish, with a dusky margin.

Var. γ . *Steph. Catal. l. c.*—Posterior wings rufous, with very obsolete strigæ, the posterior stigma entirely obliterated.

A most variable species; sometimes nearly rufescent, with all the markings very obsolete; at others nearly black, with the strigæ more or less evident. There is frequently a quadrate dusky spot between the stigmata, and a triangular one adjoining the anterior one: the series of whitish spots on the hinder margin is frequently obliterated, and sometimes the spots are united into a waved striga. The ordinary stigmata are not unfrequently edged with yellowish.

Caterpillar glossy-brown, spotted with black, with a yellowish lateral line: it is found in June, and the imago appears towards the end of July or beginning of August.

Not uncommon in gardens in the vicinity of London. “Whittlesea-mere in July last.”—*Mr. Weaver*.

Sp. 20. *fumosa*. *Alis nigricantibus stigmatibus duabus ordinariis flavo cinctis.* (Exp. alar. 1 unc. 3—4 lin.)

No. *fumosa*. *Wien. V.*—Ag. *fumosa*. *Steph. Catal. part ii. p. 67. No. 6100.*

Anterior wings dusky or blackish: marked nearly as in the last, but the strigæ more obsolete, and the third stigma wanting; with the two ordinary ones distinctly margined with yellowish.

Probably a dark variety of the foregoing variable insect, from which it differs chiefly in wanting the third or teliform stigma; a character which varies greatly in this genus, and can consequently be scarcely regarded as a specific difference.

Taken with the preceding insect at Whittlesea-mere, and found also, but rarely, near London.

Sp. 21. *obeliscata*. *Alis rufo-fuscis maculâ atrâ trigonâ ante, alterâque tetragonâ inter stigmata pallidâ.*—*Haworth*. (Exp. alar. 1 unc. 3—5 lin.)

No. *obeliscata*. *Haworth*.—Ag. *obeliscata*. *Steph. Catal. part ii. p. 67. No. 6101.*

Similar to some of the numerous varieties of the last; but the anterior wings with scarcely a rudiment of strigæ; they are rufous, with a trigonate black spot before the anterior stigma, and a quadrate one between it and the posterior one; the stigmata pale cinereous, with the teliform one elongated and margined with black; the hinder margin of the wing is irregularly edged with

fuscous: the posterior wings are whitish-yellow, with a narrow dusky margin and faint central lunule; the cilia rufescent.

The anterior wings are sometimes slightly blackish or dusky; and the spots adjoining the stigmata vary in intensity of colour.

Found in the vicinity of London, at Ripley, and at Darenth-wood, in August.

Sp. 22. ruris. *Alis anticis pallide fuscis, vittâ costali stigmatibusque ordinariis flavescenti-albidis; posticis maris albidis.* (Exp. alar. 1 unc. 4—8 lin.)

No. ruris. Haworth.—Ag. ruris. *Steph. Catal. part ii. p. 67. No. 6102.*

Also similar to Ag. nigricans, but larger, with the strigæ and stigmata stronger and more distinct: the anterior wings are pale fuscous, or rufescent, with the costa rather paler, and the ordinary stigmata yellowish-white; on each wing are four pale yellowish-ash strigæ, of which the anterior is short and basal, the next transverse and undulated, the third arcuated and placed a little behind the reniform stigma, and the fourth is in the margin itself, and sometimes obsolete; the teliform stigma is sometimes palish, with a black margin; posterior wings pale cinereous-white, with a faint central lunule; the nervures and margin dusky.

This insect varies considerably: in some examples the strigæ are nearly obliterated; and I possess one with the stigmata scarcely visible. As in its congeners, individuals occur with a triangular dusky spot before the anterior stigma, and a quadrate one between them; thus furnishing us with the No. sordida of Haworth.

Rare near London, but found at Darenth-wood. “Whittlesea-mere, in August last.”—*Mr. Weaver.* “In Norfolk.”—*A. H. Haworth, Esq.*

Sp. 23. dubia. *Alis fuscis vel nigris strigis stigmatibusque ordinariis saturatioribus, strigâ aliâ posticâ conspicuâ, undulatâ, albâ.* (Exp. alar. 1 unc. 6 lin.)

No. dubia. Haworth.—Ag. dubia. *Steph. Catal. part ii. p. 67. No. 6103.*

Anterior wings deep brown or black, with four darker transverse strigæ, the anterior stout, the second broad, geminated, and considerably waved, the third greatly bent, submoniliform, and somewhat remote from the posterior stigma, between which and the hinder margin is another undulated one, accompanied by a conspicuous streak of white dots; in the margin itself is a row of minute black spots; the stigmata are dusky with their edges darker, and a quadrate deeper spot between them: the posterior wings are nearly of an uniform dusky hue, with a deeper central lunate spot, and the nervures slightly blackish.

Found near London, with the foregoing species, of which it may probably be a mere variety, though its appearance is widely different.

Sp. 24. subgothica. PLATE 22. f. 3. *Alis anticis griseo-fuscis, costâ basi, plagâ longitudinali fasciâque posticâ submarginali, stigmatibusque pallidis.* (Exp. alar. 1 unc. 4—6 lin.)

No. subgothica. Haworth.—*Steph. Catal. part ii. p. 68. No. 6104.*

Somewhat resembling *Ag. valligera*: anterior wings griseous-brown, with a pale longitudinal dash on the costa, and another branching off from the central nervure towards the anal angle, where it unites to a broad patch of the same hue, which is carried on to the apex of the wing in the form of a band, with two acute angles on the posterior edge near the anal angle; the margin itself is irregularly dusky; the anterior stigma is subtriangular, and the reniform one ovate, rufo-ferruginous in the middle, with an ashy margin; the teliform stigma is very distinct, with its margin black, and rather acute at the tip; between the posterior stigma and the inner margin is a dusky or blackish streak, and a patch of similar hue behind the stigma: the posterior wings are whitish, with a faint central lunule, and a narrow dusky border.

Decidedly a scarce insect: it has been captured three or four times near London, and in Norfolk. “Near Barnstaple, Devon.” —*W. Radcliff, Esq.*, from whose specimen the accompanying figure was designed.

Sp. 25. exclamationis. *Alis anticis fuscis aut rufescentibus, strigis tribus stigmatibusque nigris, posticis maris albis.* (Exp. alar. 1 unc. 4—8 lin.)

Ph. No. exclamationis. Linné.—*Ag. exclamationis. Steph. Catal. part ii. p. 68. No. 6105.*

A very distinct but excessively variable species: head, thorax, abdomen, and anterior wings fuscous or rufescent, sometimes dusky or piceous; the latter with a faint abbreviated waved striga at the base: an undulated transverse one before the anterior stigma, black within and pale without, and to which the teliform stigma is united; this is generally very stout, rather short and black; behind the posterior stigma is a bent black striga, usually denticulated exteriorly, and margined on that side with pale-ash; on the hinder margin is an undulated ashy streak, and the margin itself is slightly clouded with dusky; the anterior stigma is somewhat darker in the centre than the wing, and has a black margin; the posterior one is very large and dusky, with a pale streak on its anterior edge, which is bounded with black: the posterior wings of the male are white; of the female deep ashy-brown.

The strigæ on the anterior wings are sometimes entirely obliterated, and the ordinary stigmata are occasionally nearly obsolete; at others they are both rounded and almost black: the colour of the wings varies considerably, and the costal edge is frequently suffused with a bright purple tinge.

Caterpillar dirty reddish-brown, glossy, with black spots and a pale reddish dorsal line:—it feeds on the groundsel (*Senecio vulgaris*).

Extremely abundant near London towards the end of June, frequenting gardens, hedges, and woods.



Ac. 1823. 267

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† Sp. 26. *nebulosa*. PLATE 22. f. 1.—*Alis anticis pallide cano-cinereis, basi nebulis fuscis, margine postice saturatori strigâ sub-undulatâ albâ, posticis maris albis, fœminæ cinereis*. (Exp. alar. ♂ 1 unc. 4 lin.: ♀ 1 unc. 2 lin.)

Ag. nebulosa miki.—*Steph. Catal. part ii. p. 68. No. 6106*.

Head and thorax hoary gray; antennæ ciliated in the male; pale cinereous: anterior wings pale hoary or whitish gray, the costa slightly clouded with fuscous; with a cloud of the same hue at the base of the wings, divided from the teliform stigma by a very obscure transverse waved striga; anterior stigma round, small, its centre and margin dusky; posterior reniform, clouded with fuscous and black; behind this is an arcuated submoniliform striga, beyond which the rest of the wing is deep fuscous, with an undulated white striga, composed of approximating wedge-shaped spots; in the margin itself is a series of minute black subtriangular dots: cilia pale ash: posterior wings pure white: abdomen of a glossy silken ash colour. Female nearly of an uniform pale cinereous, with the stigmata and costal spots nearly obsolete.

The spots on the abdomen of the male, as represented in the plate, appear to arise from accident, seemingly from some of the hirsuties being abraded.

I have seen two specimens only (the sexes) of this very conspicuous and apparently novel species; they were captured in July, 1827, near Barnstaple, Devonshire, by Mr. Raddon, through whose kindness I am enabled to introduce the accompanying figures and descriptions.

Sp. 27. *cinerea*. *Alis anticis cinereis, fuliginoso nebulosis, strigis duabus denticulatis atris*. (Exp. alar. ♂ 1 unc. 6—8 lin.: ♀ 1 unc. 4 lin.)

No. cinerea. *Hübner*.—*Ag. cinerea*. *Curtis. iv. pl. 165*.—*Steph. Catal. part ii. p. 68. No. 6107*.

Thorax cinereous, anteriorly dark: head cinereous; antennæ griseous: anterior wings griseous-ash, with dusky shades; with two black dots at the base, a slender denticulated striga before the middle, and another behind; the anterior stigma is nearly obsolete, but the posterior is distinct; between them is a transverse angulated fuscous or rufescent striga, arising from a dusky spot on the costa, and passing to the inner margin; the hinder has an obscure waved striga, and a series of minute black dots on the margin itself: cilia griseous-brown; posterior wings whitish, with a dusky central spot, and a series of blackish dots on the margin. Female considerably darker, and destitute of the griseous hue, the strigæ more evident but less denticulated; the posterior wings cinereous.

This species differs considerably in habit from the rest of the genus, in the obscurity of the stigmata particularly, and in the total absence of the teliform one.

Caterpillar slightly hairy, greenish-brown, with three reddish stripes on the back, and a glossy-brown head; the legs yellowish-white.

Not common, taken occasionally on a heathy common to the

north of Darenth-wood, flying by day, and in other parts of the country. "Netley, Salop."—*Rev. F. W. Hope*. "Near Burghfield, Berks."—*Rev. C. S. Bird*. "In the Isle of Wight."—*Mr. Weaver*.

GENUS XCII.—GRAPHIPHORA, *Hübner*.

Palpi moderate, ascending, parallel, densely clothed with scales, the base pilose, the terminal joint distinct, squamous; triarticulate, the basal joint curved, the second longer than the first, slightly attenuated, the terminal small, elongate-ovate, a little acuminate: *maxillæ* as long as the antennæ. *Antennæ* various, moderate, generally simple, with the lower surface pubescent in the females; usually ciliated beneath in the males, or deeply bipectinated, with the pectinations abbreviated towards the apex, sometimes serrated and pubescent beneath: *head* large, scaly: *thorax* slightly crested: *wings* generally rather broad, slightly rounded behind, horizontal during repose, not denticulated; mostly griseous or dusky, with dark spots towards the costa. Larva exposed, usually with pale lateral stripes, naked: pupa subterranean.

Like the preceding genus, *Graphiphora* is chiefly composed of dingy and similarly marked species, though amongst them may be noticed a few of delicate and somewhat vivid colours; from the former circumstance, the investigation of the species appears to have been neglected in this country, as very few cabinets contain above six or eight of the following species. The genus is evidently closely allied to *Agrotis*, and several of the species are included in that genus by *Ochsenheimer* and *Treitschke*, while *Schrank* and *Boisduval* agree in uniting the whole under the incorrect appellation *Noctua* (a name which has been also employed by *Treitschke*, in lieu of *Graphiphora*, although justly restored by *Savigny* to a genus of owls); they may, however, be distinguished by the superior width and glossiness of the anterior wings, which have usually but two stigmata, and by the general simplicity of the antennæ.

Sp. 1. rhomboidea. PLATE 19. f. 1. 8.—*Alis anticis rubro-brunneis, tincturâ rosâ, maculâ rhomboideâ alterâque triangulari rufo-fuscis; antennis maris pectinatis.*
(Exp. alar. ♂ 1 unc. 8 lin.: ♀ 1 unc. 6 lin.)

No. rhomboidea. *Esper*?—Gr. rhomboidea. *Steph. Catal. part ii. p. 68. No. 6108.*

A beautiful species: head and thorax cinereous, irrorated with rosy: anterior wings reddish or ashy-brown tinted with bright rose-colour, with a red-brown rhomboid spot, and a triangular one near the stigmata; at the base is an obscure abbreviated undulated dusky striga, a second, much waved anteriorly, before the



stigma, and a third, more distinct, suddenly angulated at the costa, and considerably arcuated, composed of connected lunules, the points of each directed outwards, between which and the posterior margin is an undulated pale rosy striga, and the hinder margin itself has a row of minute fuscous lunules; cilia fuscous, tinted with rosy; stigmata cinereous: posterior wings whitish-ash with an ochraceous tinge, with a central spot and a broad marginal band fuscous; cilia ochraceous: antennæ pectinated in the male,—the colours more vivid, and the markings stronger in the female, antennæ simple.

The strongly pectinated antennæ of the male of this species, and its general habit, appear to indicate more than a specific difference.

Of this delicately beautiful insect I have seen four examples only, which were captured in July last on the borders of Whittlesea Mere, by Mr. Weaver.

Sp. 2. *renigera*. *Alis anticis griseo-nigricantibus, atomis canis sparsis lineisque transversis saturatoribus; posticis fusco-cinereis, ad basin pallidioribus.* (Exp. alar. 1 unc. 4—6 lin.)

No. *renigera*. *Hübner. Steph. Catal. part ii. p. 63. No. 6109.*

Head, thorax, and abdomen pale ashy-brown: anterior wings shining-griseous or brownish-black, thickly sprinkled, especially towards the base, with minute hoary dots: before the middle is an obscure paler striga, bounded on each side with black, and behind the middle is another very obsolete incurved one; the stigmata are scarcely visible, but the posterior one is indicated by a black reniform patch; the hinder margin of the wing is very deep fuscous black, with an indistinct streak of fuscous lunules on the margin itself; cilia dusky: posterior wings deep fuscous-ash, or blackish, with the base rather paler, the cilia whitish ash.

This conspicuous but sombre insect is unquestionably rare, at least in the southern part of England, and but few specimens have occurred in the north. “Derbyshire.”—*Rev. W. T. Brce*. “Westmoreland, in July, 1827.”—*Mr. Weaver*. “Scotland, near Forfar.”—*G. Milne, Esq.*

Sp. 3. *latens?* *Alis anticis cinereo-nigricantibus, lucidis, strigis undatis fuscis obsoletissimis, stigmata ordinaria, fere obsoleta.* (Exp. alar. 1 unc. 6 lin.)

No. *latens*. *Hübner?*—*Gr. latens?*—*Steph. Catal. part ii. p. 68. No. 6110.*

Resembling the last in the obscurity of its markings: head, thorax, and abdomen deep cinereous: anterior wings of a glossy ashy-black, most obsoletely strigated transversely with undulated fuscous lines, visible only in certain positions; the first of which is towards the base and abbreviated, the second anterior to the basal stigma, the last beyond the reniform stigma, and considerably bent; beyond this the wing is darker, and has towards the hinder margin an obscure pale denticulated striga, the margin itself immaculate; cilia fuscous: stigmata very obscure, with a dark quadrate spot between them: posterior wings obscure cinereous, with the cilia whitish.

The only example I have seen of this insect was taken in the south of Scotland in the summer of 1827.

Sp. 4. *pyrophila*. *Alis anticis cinereis, strigis maculisque fuscis, posticis fuscis, nitidulis.* (Exp. alar. 1 unc. 6—9 lin.)

No. *pyrophila*. *Wien. V.*—Gr. *pyrophila*. *Steph. Catal. part ii. p. 68. No. 6111.*

Head and thorax cinereous, the latter with a black spot on each side in front: anterior wings cinereous or fuscous, with various fuscous spots and strigæ, the latter dispersed at irregular distances; the first being basal, geminated, and slightly flexuous, the second considerably before the anterior stigma, obliquely transverse, considerably undulated exteriorly, and also duplex; the third is submoniliform and obscure, a little bent, and situated behind the posterior stigma; near the hinder margin is a fourth striga composed of conical spots, and slightly waved toward the apex and the anal angle; the posterior margin has a row of minute black dots; cilia fuscous, with a pale line at the base; between the stigmata, which are distinct, and the anterior immaculate, runs a faint transverse dusky striga: the posterior wings are deep glossy fuscous.

Caterpillar dirty grayish-brown.

Also a rare species: one or two specimens have, I believe, occurred at Southgate near London, and also in the county of Warwick. "Several examples found in July, 1826, at Netley, Salop."—*Rev. F. W. Hope*, who kindly supplied me with the specimens which I possess. "Zetland."—*Rev. Dr. Fleming*. "Lanarkshire."—*G. Lyell, Esq.*

† Sp. 5. *lunulina*. "*Alis fuscis strigis lunularum pallidarum.*" *Haworth*. (Exp. alar. 1 unc. 8 lin.)

No. *lunulina*. *Haworth*.—Gr. *lunulina*. *Steph. Catal. part ii. p. 68. No. 6112.*

"Wings fuscous, with four obsolete pale strigæ, edged, as it were, with minute black lunules; the first at the base, nearly entirely obliterated, the second undulated and placed before the middle, the third arcuated and placed behind: between these last is a lunule and several pale spots in the place of the margin of the posterior stigma; the anterior stigma wanting; beyond the third striga is a fourth dentated one, and on the margin itself is a row of extremely minute black spots; cilia fuscous, or slightly cinerascens: posterior wings cinereous, with a fuscous border, and a pale striga on the margin itself, cilia whitish."—*Haworth*.

The only specimen I have seen of this species is in Mr. *Haworth's* cabinet; it was captured in Cambridgeshire by Mr. *W. Skrimshire*.

Sp. 6. *crassa?* *Alis anticis fuscis nitidis atro subnebulosis, strigâ posticâ pallidâ undatâ.* (Exp. alar. 1 unc. 6—9 lin.)

No. crassa. *Hübner*?—Gr. crassa. *Steph. Catal. part ii. p. 68. No. 6113.*

Thorax deep fuscous, reddish anteriorly: anterior wings with a dark streak at the base, and several irregular black spots between and round the ordinary stigmata, which are rather obscure, and the anterior elongate-quadrate; and there is sometimes the appearance of a third, as in the following species: there are also three obscure pale transverse strigæ, as in most of the foregoing insects, more or less edged with fuscous, placed one at the base, the second before, and the last behind, the stigmata; and towards the hinder margin is a distinct pale waved one; the margin itself immaculate: cilia fuscous: posterior wings whitish, with the nervures and margin blackish; cilia whitish. Whether this be truly synonymous with *Noctua crassa* of *Hübner* I am not certain: Mr. Haworth thinks it is, but it appears rather to resemble the *No. ruris* of that author, if *Ochsenheimer's* reference to *Engramelle* be correct.

Less rare than the foregoing insects, though far from common: it does not occur near London, but has been captured in Norfolk, and in Scotland, in August, frequenting gardens. “*Bottisham.*”—*Rev. L. Jenyns.* “*Netley, Salop.*”—*Rev. F. W. Hope.*

Sp. 7. *augur. Alis anticis fusco-rufescentibus strigis undatis caracteribusque nigris, posticis fusciscentibus.* (Exp. alar. 1 unc. 7—9 lin.)

No. *augur. Fabricius.*—Gr. *augur. Steph. Catal. part ii. p. 69. No. 6114.*

Somewhat resembling the last: the anterior wings fuscous or dusky rufescent, with a dentated and abbreviated pale striga at the base, a second undulated one, edged exteriorly with black, before the middle, beyond which are two irregular black rings forming two stigmata placed transversely, as in most of the *Agrotæ*, followed by the usual reniform stigma, cinereous in the middle, with a broad black margin; then a bent striga composed of minute fuscous or black lunules, and a dusky fascia, terminating abruptly by a pale undulated striga; the hinder margin immaculate, or faintly spotted with pale cinereous and fuscous dots: cilia fuscous: posterior wings fuscous, with a central lunule, the nervures and margin darker.

The intensity and bulk of the black stigmatiform rings, as well as the colour of the wings, vary considerably in different specimens.

Not uncommon: taken at Coombe and Darent-woods, near Ripley, Hertford, &c. in July. “*Bottisham.*”—*Rev. L. Jenyns.* “*Epping.*”—*Mr. H. Doubleday.*

Sp. 8. *brunnea. Alis anticis purpurascens-brunneis, fasciâ posticâ subundulatâ saturatiore, stigmate postico flavo, punctoque medio atro.* (Exp. alar. 1 unc. 6—8 lin.)

No. *brunnea. Wien. V.*—Gr. *brunnea. Steph. Catal. part ii. p. 69. No. 6115.*

Head, thorax anteriorly, and tuft and sides of the abdomen rufous: anterior wings purplish-brown, with obsolete strigæ, or dusky spots towards the base; a quadrate black spot between the stigmata, of which the anterior is rounded,

and margined with black and yellow; the posterior, as usual, reniform, yellow, with the middle generally cinereous, and a black patch in it towards the middle of the wing; behind the stigmata is an obscure submoniliform rufo-brunneous striga, followed by a broad slightly undulated deep purplish-brown fascia; the hinder margin rufescent; the cilia rufous: posterior wings of a rufous-brown, with a dusky central spot; cilia bright rufous.

In some examples the anterior wings are of a bright rosy-brown, with the markings more or less obliterated: but in all the posterior stigma is yellow.

Caterpillar brown, spotted with white, with a bluish lateral line and black head, the latter with two white streaks: it feeds on the Pea (*Pisum arvense*): the imago appears toward the end of July, or beginning of August.

Also found at Coombe and Darenth-woods, and in other places throughout the metropolitan district, not uncommonly. "Netley, Salop."—*Rev. F. W. Hope*.

Sp. 9. candelisequa. *Alis anticis griseis glauco pruinosis, strigis atris, extimâ dentatâ, alterâque posticâ pallidâ subundulatâ.* (Exp. alar. 1 unc. 6 lin.)

No. candelisequa. *Wien. V.*—Gr. candelisequa. *Steph. Catal. part ii. p. 69. No. 6116.*

Head and thorax griseous: abdomen whitish-gray: anterior wings griseous, with a glaucous hue, and several black transverse strigæ, of which the basal one is abbreviated, the second undulated before the middle, the third rather broad, arising from the costa, and passing between the stigmata, where it becomes abruptly angulated, the angle pointing outwards, and terminates about the middle of the inner margin; beyond the posterior stigma is a faint striga which is externally dentated, and between this and the posterior margin is a very slightly waved pale yellowish-brown striga: the anterior stigma is of an irregular form, and rather obsolete, the posterior reniform; there is a minute black spot in the place where the teliform stigma of the *Agrotis* is situated; cilia rufo-griseous: posterior wings dusky-ash, with pale rufescent cilia.

Caterpillar dusky-brown, with reddish and white streaks, and a reddish-yellow head.

My specimen of this species was taken in the larva state at Darenth-wood, in May, and appeared in July, many years since.

Sp. 10. tristigma. *Alis anticis fusco-brunneis, maculâ rhomboideâ inter stigmata alterâ triangulari tertiâque baseos irregulari atris.* (Exp. alar. 1 unc. 6—8 lin.)

Go. tristigma. *Ochsenheimer.*—*Steph. Catal. part ii. p. 69. No. 6117.*

Allied to the following: head, thorax, and anterior wings deep fuscous-brown, the latter strigated as in *Gra. brunnea*, with a large quadrate black patch between the stigmata, a triangular one at the base of the anterior stigma, and a third of an irregular form and variable in size and intensity, at the base of the wings near the inner margin; towards the hinder margin is an undu-

lated fuscous striga; the margin itself is immaculate and the fringe is dusky: the posterior wings are dusky, with the base rather palest.

Caterpillar dusky, with a whitish dorsal line and a slender lateral white one, with a rufescent streak beneath: it feeds on the Dandelion (*Leontodon Taraxicum*), and is found in May; the imago in July.

Not common; found however at Darenth and near Ripley.

Sp. 11. *triangulum*. *Alis anticis griseo-purpurascensibus atro maculatis, maculâ nigrâ costali versis apicem, posticis fuscis*. (Exp. alar. 1 unc. 7—8 lin.)

Ph. *triangulum*. *Hufnagle*.—Gr. *triangulum*.—*Steph. Catal. part ii. p. 69. No. 6118*.—Ph. No. *sigma*. *Don. xvi. pl. 562*.

Head and thorax anteriorly cinereous; the latter posteriorly, and anterior wings griseous-purple or fuscous, with four pale transverse strigæ as usual, the first abbreviated and basal, with a black spot at its origin on the costa, and two or three at its termination towards the inner margin; the second oblique, scarcely undulated, also arising from a black costal spot, and edged externally with the same colour; the third obscure, placed behind the stigmata, and margined on each side with dusky; and towards the hinder margin, arising from an oblique black dash, near the apex of the costa, is the fourth, which is considerably undulated and edged interiorly with fuscous spots; the margin itself has a series of minute dusky lunules; between the stigmata is a large quadrate black spot, and a second between the anterior stigma and the oblique transverse striga; the abdomen and posterior wings are fuscous, the apex of the former rufous.

Caterpillar reddish-ash, with a dusky line on the back and a reddish one on each side, with two brownish streaks on each joint; it changes in June to a brown pupa, and the imago appears towards the end of July.

More frequently captured than the foregoing species, but nevertheless not very abundant; it is most commonly found at Darenth-wood, but it occurs also at Coombe and Birch-woods; near Dover, Brighton, Hertford, and Ripley. "York and Suffolk."—*W. C. Hewitson, Esq.* "Epping."—*Mr. H. Doubleday*.

† Sp. 12. *depuncta*. *Alis grisescentibus, laturis marginalibus nigricantibus, strigâque posticâ punctatâ*.

Ph. No. *depuncta*. *Linné*.—Gr. *depuncta*. *Steph. Catal. part ii. p. 69. No. 6119*, note.—No. *depunctina*. *Haworth*. (!)

Anterior wings cinereous or grisescent, with two black spots at the base, then two or three confluent ones towards the costa; anterior stigma ovate, posterior reniform, followed by an obsolete dusky striga, and a row of minute black dots, with the hinder margin of the wing dusky.

This species is enumerated by Mr. Haworth in his *Prodromus*, but it is not included in his valuable *Lepidoptera Britannica*, neither have I ever seen a British specimen; I therefore infer that it is not indigenous.

Sp. 13. baja. *Alis anticis griseo-ferrugineis, medio obscure nebulosis, puncto minuto basi maculâque costali versùs apicem nigris.* (Exp. alar. 1 unc. 6—8 lin.)

No. baja. *Wien. V.*—Gra. baja. *Steph. Catal. part ii. p. 69. No. 6120.*

Anterior wings rusty-griseous, with several obscure transverse strigæ, composed of fuscous lunular spots, and a more distinct dusky angulated one in the middle, passing between the stigmata, which are usually rather obsolete, the anterior being discriminated by a pale marginal line, and the posterior by a fuscous cloud and pale margin; near the base of the wing is a minute but conspicuous black dot, and towards the apex two or three united into an oblique costal patch, from which an obscure pale transverse striga arises; the hinder margin is deep rufo-griseous, with rufous cilia: posterior wings deep fuscous, with the hinder margin sometimes irregularly paler; the cilia rufous.

In some examples the strigæ and stigmata are more distinctly marked; and the ground colour of the insect varies considerably.

Caterpillar varied with cinereous and brown, with three dorsal whitish lines and a lateral yellowish one: it feeds on the nightshade (*Atropa Belladonna*), and changes to pupa in June; the imago appearing towards the end of July.

Found nearly in similar places with the preceding insect, not very uncommonly.

Sp. 14. erythrocephala. *Alis anticis griseo-ferrugineis, maculâ sub-quadratâ inter stigmata fuscâque posticâ castaneis.* (Exp. alar. 1 unc. 4—7 lin.)

No. erythrocephala. *Wien. V.*?—Gr. erythrocephala. *Steph. Catal. part ii. p. 69. No. 6121.*

Somewhat resembling the preceding insect, but without the black costal spot, and smaller: the anterior wings bright rusty-griseous, with several indistinct undulated transverse strigæ, and a broader dusky one between the stigmata as in that species; the posterior margin of the wing is brownish-chestnut, with a distinct slightly waved pale castaneous striga; the extreme margin with a row of faint dusky spots; the cilia rufous-brown, with a pale rufous streak at the base; between the stigmata is a subquadrate castaneous spot, and between the anterior one and the inner margin a minute black dot; the posterior stigma is sometimes yellowish, and the anterior has a dusky margin, but in general they are very obscure: posterior wings fuscous, with a darker central lunule.

Caterpillar gray-brown, with a dusky streak on the back, and two whitish lateral lines, and a few white spots; it feeds on the Plantain (*Plantago lanceolata*)? is found in May, and the imago appears in July.

Not common; found at Darenth and Birch-woods; also once near Sydenham.

Sp. 15. festiva. *Alis anticis pallide incarnatis aut subferrugineis nebulosis, maculis angulatis saturatioribus ad stigmatibus flavis.* (Exp. alar. 1 unc. 3—6 lin.)

No. festiva. *Wien. V.*—Gr. festiva. *Steph. Catal. part ii. p. 70. No. 6122.*

A beautiful and variable species: anterior wings generally pale towards the base, with two ordinary strigæ, and a fuscous or rusty spot; then the stigmata which are pale rufous-yellow, but indistinctly margined; between them is a ferruginous quadrangular spot, and between the anterior stigma and the inner margin is a dusky or black spot, more or less conspicuous; the posterior half of the wings is irregularly varied with ferruginous and griseous fasciæ, and bears the two ordinary strigæ, which are mostly very indistinct; and in the margin is a row, more or less evident, of dusky or black spots; cilia rufo-ferruginous: posterior wings cinerascens, with a central lunule, a transverse striga behind the middle, and the hinder margin dusky; cilia rufous.

Scarcely two examples occur precisely similar: some are beautifully varied with rufous and purple shades; others have the spots between the stigmata black; the strigæ more or less distinct, and the stigmata themselves are frequently rufous, and in some specimens the spots are nearly obliterated: the insect is sometimes nearly cinereous, with a faint rosy tinge.

Caterpillar reddish-yellow, sprinkled with yellow spots, with a yellowish dorsal, and two dusky lateral lines; it feeds on the Primrose (*Primula vulgaris*), and changes to pupa in June, and towards the end of the month the imago appears.

Frequently taken at Darenth-wood towards the end of June or beginning of July; it also occurs, though more sparingly, at Coombe-wood, and near Hertford. “Buxton and Netley.”—*Rev. F. W. Hope.*

Sp. 16. punicea. *Alis anticis griseo-roseis fusco-strigatis, maculâ quadratâ inter stigmatâ obscurâ, aliâque costali versûs apicem fuscis.* (Exp. alar. 1 unc. 2—5 lin.)

No. punicea. *Hübner.*—Gr. punicea. *Steph. Catal. part ii. p. 70. No. 6127.*

Head and thorax immaculate rosy-griseous: anterior wings the same, with obscure fuscous strigæ placed nearly as usual; the stigmata rather pale, with the margins sometimes yellowish; the space between with an obscure dusky quadrate spot; and between the anterior and the inner margin a minute black dot; behind the stigmata is the usual arcuated striga, which has a dusky outer edge united to a similar coloured patch on the costa; towards the hinder margin is a slightly waved pale or flavescent striga, the margin itself is rather dusky, and has occasionally a row of minute black specks on its extreme edge: cilia reddish: posterior wings cinerascens, with a dusky central spot, and the cilia reddish.

This insect varies considerably in the colour and intensity of the fuscous strigæ. Caterpillar reddish-brown, with a yellow dorsal stripe, the sides with a pale streak, irrorated with brown and yellowish: head brown.

Less common than the last, but occasionally found in considerable plenty at Darenth-wood, and near Winchmore-hill in June. “Epping.”—*Mr. H. Doubleday.* “Netley.”—*Rev. F. W. Hope.*

Sp. 17. *C. nigrum*. *Alis anticis fusco-cinereis lineolâ basi, aliâque costali versùs apicem, maculâque centrali extâs pallidâ atris; posticis albidis.* (Exp. alar. 1 unc. 3—6 lin.)

Ph. No. *C. nigrum*. *Linneé*.—Gr. *C. nigrum*. *Steph. Catal. part ii. p. 70. No. 6123.*

Thorax fuscous, anteriorly pale; abdomen cinereous: anterior wings deep fuscous-ash, with the ordinary strigæ nearly obliterated, a pale ochraceous-white patch in the costa towards the middle, bordered towards the inner margin with a deep arcuated black spot; the anterior stigma obsolete; or rather confused in the pale costal patch; the posterior griseous, dusky at the base, and forming the termination of the central black spot; at the base of the wing is an irregular black patch or streak, and towards the apex on the costa another placed somewhat obliquely, and from which a slightly undulated pallid striga arises, the space between which and the fringe is darker than the rest of the wing; fringe dusky: posterior wings pale luteous-white in the males, with the hinder margin rather dusky; and in the females cinerascens, with the base palest.

This species varies a little in size, colour, and intensity of markings.

Caterpillar varied with cinereous and brown, with a pale lateral line and transverse lineola on the sides: it feeds on the Chickweed (*Alsine media*), Marsh Willow herb (*Ephilibium palustre*), and Spinach; changes in May to a brown pupa, and the imago appears towards the end of June and beginning of July.

Not very rare; found in various parts of the country: I have taken it at Darent and Coombe woods, and in the lanes near Ripley and Hertford; it also occurs in Devonshire, the New Forest, in Norfolk, Suffolk, &c. “Bottisham.”—*Rev. L. Jenyns*. “Epping.”—*Mr. H. Doubleday*. “Buxton.”—*Rev. F. W. Hope*.

† Sp. 18. *musiva*. *Alis anticis brunneis, lineâ baseos flexuosâ atrâ vittâque marginis superioris albidâ, thorace fasciâ atrâ.* (Exp. alar. 1 unc. 6 lin.)

No. *musiva*. *Hübner*.—Gr. *musiva*. *Steph. Catal. part ii. p. 70. No. 6124.*

Head and thorax reddish-white, the latter with a transverse black streak anteriorly: anterior wings reddish-brown, with a reddish-white streak at the base towards the costa, and the ordinary strigæ nearly obliterated; at the base is a flexuous black line, which extends nearly to the posterior stigma, terminating in a black spot; the anterior stigma is round and pale cinereous, the posterior reniform and dusky in the middle: the fringe is yellowish-red: posterior wings whitish. Caterpillar yellowish-green, with the head brown, a dusky-green dorsal line, and two whitish lateral lines.

One specimen only of this beautiful insect has, I believe, hitherto been captured in England; the locality of which is unknown to me: it was obtained by Dr. Leach about fifteen years ago, and deposited by him in the collection of the British Museum.

Sp. 19. *plecta*. *Alis anticis purpureo-brunneis, lineâ nigrâ basali, costâ a basi ad medium pallidâ; posticis albidis.* (Exp. alar. 1 unc. 2—3 lin.)

Pl. No. plecta. *Linné*.—Gr. plecta. *Steph. Catal. part ii. p. 70. No. 6126.*

A small though beautiful species: head and thorax purplish- or reddish-brown, the latter with a black transverse streak in front: anterior wings light dusky-purple, with the costa pale ochraceous white, from the base nearly to the middle, with a black streak at the base, and another in the middle of the wing, nearly united to the former, and traversing, as it were, the stigmata, the anterior of which is well defined, circular, and white, with its centre dusky; the posterior rather small, heart-shaped, cinereous, with a whitish border: near the hinder margin is an obscure undulated streak, the margin itself has a row of minute black dots; the fringe is purplish-brown: abdomen cinereous, with the apex rufescent; posterior wings whitish, with the fringe ochraceous.

Var. β . The anterior wings without the pale costal spot.

Caterpillar green, with a brown head; it feeds on various plants, and is found in May and August; the imago appearing in June and September.

A beautiful and not uncommon insect, frequenting hedges and lanes in woody situations, throughout the metropolitan district. "Common at Kimpton and Amesbury."—*Rev. G. T. Rudd.* "Epping."—*Mr. H. Doubleday.*

Sp. 20. albinacula. PLATE 19. f. 3. *Alis anticis fusco-brunneis purpureo variegatis, vittâ costali pallidâ, lineolâ basi atrâ, plagâ elongatâ centrali fusco-nigrâ, in qua macula rotundata alba.* (Exp. alar. 1 unc. 5—7 lin.)

Gr. ? albinacula *mihî*.—*Steph. Catal. part ii. p. 18. No. 6125.*

Antennæ griseous: head cinereous, with two black spots on the crown: thorax griseous-ash, transversely streaked anteriorly with black and white: anterior wings shining fuscous brown, beautifully shaded with rich purple, with a pale reddish patch at the base, towards the costa; a black streak at the base, with a subocellated purplish spot, between its tip and the inner margin, having an ovate black stigmatiform mark adjoining, placed as in most of the *Agrotæ*; on the disc is an elongate fuscous black patch, acute anteriorly, and truncate posteriorly: in this the anterior stigma, which is round and white, is placed, and the posterior one at the hinder extremity; the ordinary strigæ are rather obsolete; but in the place of the usual hinder one is a series of fuscous dots, united by an interrupted black longitudinal streak to the reniform stigma: the posterior wings dusky-ash, and glossy, with a faint transverse striga, and darker border.

With the location of this remarkably conspicuous species I am not satisfied: it differs in many respects from the rest of the genus, especially in the roundness of the base of its somewhat reticulated anterior wings, the internally serrated and ciliated antennæ of the male, and in its autumnal flight: in many respects it resembles the species of the genus *Agrotis*.

The specimen whence the accompanying figure was designed was captured in September, 1824, at Whittlesea-mere; since which

period other examples have occurred near Ringwood, Hants, in the autumn.

GENUS XCIII.—SEMIOPHORA* *mih.*

Palpi short, very hairy at the base, the terminal joint exposed and scaly; tri-articulate, the basal joint slightly bent, stout, not half as long as the second, which is elongate, slightly attenuated, the terminal one minute, ovate, subtruncate: *maxillæ* as long as the antennæ. *Antennæ* bipectinated in the males, serrated in the females, each joint producing a bristle on both sides: *head* small, pilose: *thorax* stout, woolly, not crested: *body* not very stout, short: *wings* entire, slightly deflexed, *anterior* elongate, narrowed at the base, rather acute at the tip, *posterior* abbreviated, subtrigonal: *legs* short: *femora* woolly. Larva naked, exposed: pupa subterranean.

This genus should unquestionably be separated either from *Episema*, with which it is associated by Ochsenheimer, or from *Graphiphora*, to which Treitschke removes it, and amongst which (under the improper name of *Noctua*, after Schrank) Boisduval places it in his recent Catalogue of European Lepidoptera. It is evident from the above remark that the insect in question offers some peculiarities. I shall therefore, in this, as in other instances, fearlessly consider such very discordant species as belonging to uncharacterized genera, as a more correct view of species must be obtained by separating dissimilar individuals, than by uniting them, in order to avoid applying a new generic term. From the preceding genera the present differs by the woolliness of its smooth thorax, the brevity of the posterior wings, by reposing with the anterior ones deflexed, &c.

Sp. 1. *gothica*. *Alis anticis griseo-fuscescentibus, arcu lineolâque medio atris, stigmatibus margine pallidè solo conspicuis.* (Exp. alar. 1 unc. 3—7 lin.)

Ph. No. *gothica*. Linné.—Se. *gothica*. Steph. Catal. part ii. p. 70. No. 6128.

Head and thorax clothed with reddish or griseous-brown woolly hairs: anterior wings brownish-griseous, with two black spots (frequently confluent) at the base, in place of the ordinary basal striga, then three equidistant obsolete pale strigæ, each arising from a dusky or black costal spot; between the two anterior of which is a conspicuous arcuated black spot, and an oblong black line, the space between being brown: the anterior stigma, of which the pale ashy margin alone is visible, forms the inner segment of the arch, and the posterior one, of which also the pale margin alone is apparent, is placed

* Σημείον signum, φέρω fero.

at its termination; between this stigma and the following striga is frequently a brown spot; and the posterior margin, beyond the third striga, is generally dusky or dark brown: posterior wings fuscous; cilia rufescent.

Both sexes vary greatly: in some the oblong line is very minute, in others it is considerably elongated; in some specimens there is a transverse pale band, between the third and fourth strigæ; and the wings are not uncommonly varied with beautiful purple shades.

Caterpillar pale-green, yellowish on the back, with a white lateral line and a few dusky specks:—it feeds on the oak, honeysuckle, woodbine, &c.: the imago appears towards the middle of April.

Not a very uncommon species, frequenting hedges and wood sides: I have often taken the larva both at Darenth and Coombe woods, Highgate, Hampstead, &c. “Kimpton, not common.”—*Rev. G. T. Rudd*. “Epping.”—*Mr. H. Doubleday*. “Bottisham.”—*Rev. L. Jenyns*. “Netley.”—*Rev. F. W. Hope*.

GENUS XCIV.—ORTHOSIA, *Ochsenheimer*.

Palpi nearly horizontal, densely clothed with elongate scales, the terminal joint scarcely projecting; triarticulate, basal joint a little bent, above half the length of the second, and more robust, second nearly straight, terminal about the length of the basal, obscurely pear-shaped: *maxillæ* shorter than the antennæ. *Antennæ* simple in the females; bipectinated or ciliated in the males: *head* small, with long scales above: *thorax* not crested, stout, woolly: *abdomen* short, tufted in the males, acute in the females: *wings* slightly deflexed, entire; *anterior* elongate, the apex slightly rounded or somewhat acute; *posterior* short, ovate-triangular: *legs* moderate. Larva naked, longitudinally streaked; pupa subterraneous.

Orthosia evidently consists of two groups of insects (as briefly characterized in the following pages), differing considerably from each other in colour and habit, although their general structure is sufficiently alike to authorize their union under one genus:—the species of the first section are vernal, and the remainder mostly autumnal; they are all extremely variable, and several manifest varieties have been hitherto considered in this country as distinct species. In the woolliness and stoutness of the thorax the genus resembles the preceding, but its other characters are different; the structure of the palpi especially: by the former mark it may be known from *Agrotis*, *Graphiphora*, and *Mythimna*, added to which the last genus has the thorax strongly crested in front.

A. Anterior wings somewhat rounded at the tip. (Antennæ of the males more or less pectinated.)

Sp. 1. *instabilis*. *Alis anticis griseo-fuscis, fasciâ mediâ ferrugineâ, stigmatibus ordinariis pallidè cinctis, strigâque posticè simplice*. (Exp. alar. 1 unc. 5—8 lin.)

No. *instabilis*. *Wien. V.*—Or. *instabilis*. *Steph. Catal. part ii. p. 70. No. 6129.*

A most variable species: head and thorax generally pale griseous-ash or cinereous; anterior wings griseous-brown, or cinerascens clouded with griseous, with the ordinary strigæ rather obsolete, and a broad angulated ferruginous bar between the stigmata, which are margined with pale ash or whitish, and the posterior one has a black spot towards the inner margin of the wings; the posterior striga is simple and whitish or lutescent, slightly undulated, and in general has a rusty spot at its origin on the costa, another at its termination on the inner margin, and a third about its centre: posterior wings fuscous, with a dusky central spot, and another near the anal angle: body fuscous, with the tuft and sides reddish. Antennæ griseous, slightly pectinated in the male.

It is difficult to find two specimens precisely resembling each other; nevertheless their differences consist mostly of slight variations of colour: in some examples the anterior wings are pale griseous ash, with two rusty-brown strigæ and spotted cilia (1): others have the anterior wings clouded with griseous, with three griseous lunules towards the posterior striga (2): others again have the anterior wings dusky, with the margins of the stigmata and the posterior striga alone pale (3): while in some the anterior wings are very narrow, varied with chestnut and brown, with the margins of the stigmata pale, and the posterior whitish striga interrupted (4): the stigmata vary in form, and are sometimes confluent.

Caterpillar green, with a white dorsal and yellow lateral line: it feeds on the oak: the imago appears towards the beginning of April.

An extremely common species, occurring throughout the metropolitan district; in great abundance in Richmond Park and Epping Forest; usually obtained at the former place by digging the pupæ during the winter months. “Epping.”—*Mr. H. Doubleday*. “Netley.”—*Rev. F. W. Hope*.

Sp. 2. *intermedia*. *Alis anticis griseo-fuscis, fasciis tribus saturatoribus, annulis duobus strigisque ordinariis pallidis, strigâ posticâ duplice; antennis maris valdè pectinatis*. (Exp. alar. 1 unc. 6—7 lin.)

Or. *intermedia miki*.—*Steph. Catal. part ii. p. 71. No. 6130.*

(1) *Noctua nebulosa*, *Haworth*.

(3) *No. fuscata*, *Haw.*

(2) *No. subsetacea*, *Haw.*

(4) *No. angusta*, *Haw.*

Allied to the foregoing, but differs in the strongly pectinated antennæ of the male, in which alone it resembles the following: head, thorax, and anterior wings griseous-brown, the latter with three equidistant darker fasciæ, with the ordinary striga paler, and the posterior one consisting of two somewhat parallel and slightly undulated lines, and unaccompanied by darker spots; the stigmata have the margins alone conspicuous and pale, and the posterior one is destitute of a black spot: the hinder margin of the wing itself has a narrow pale streak: the abdomen and posterior wings are dusky-ash; the apex of the former and the cilia with a rosy tinge; antennæ of the male deeply pectinated, with a white rib and griseous radii.

I have seen a pair only of this species: the male I obtained of a practical collector, the female was found by myself in the pupa state, at the foot of an oak in Richmond Park many years since.

Sp. 3. *gracilis*. *Alis anticis plumbescentibus griseo subnebulosis, strigâ obsoletâ posticâ e punctis griseo-nigris extûs pallido adnatis*. (Exp. alar. 1 unc. 6—7 lin.)

No. *gracilis*. *Wien. V.*—Or. *gracilis*. *Steph. Catal. part ii. p. 71. No. 6131.*

Antennæ strongly pectinated; pale griseous, with the shaft ashy: head, thorax, and anterior wings lead-coloured ash, more or less clouded with cinereous, with the ordinary strigæ very obsolete; the posterior one pale, slightly waved, and accompanied on its inner edge with several black spots: stigmata deep fuscous-ash, with the margins pale griseous; the anterior circular, the posterior reniform; abdomen and posterior wings dusky.

Like its congeners, this rare species seems to be extremely variable: in some examples the ordinary strigæ are very distinct, a pale ferruginous bar traverses the centre of the wings between the stigmata, and the arcuated striga behind the posterior stigma is externally pectinated: the pale hinder striga is sometimes accompanied by an almost continuous series of black dots.

Caterpillar green, the sides yellowish, with yellow rings, each articulation with an anterior black spot and four obscure dots: it feeds on the oak, willow, bramble, &c.; changes in July to pupa, and appears at the beginning of the following April.

Not common: the pupa has been occasionally found at the roots of oaks in Epping Forest, and the larva has been taken sometimes at Darenth and Birch woods; and I believe the insect has occurred in Richmond Park.

Sp. 4. *munda*. *Alis anticis griseo-cinereis, aut ferrugineis, strigâ posticâ pallidior, punctis duabus geminatis ad apicem atris*. (Exp. alar. 1 unc. 7—8 lin.)

No. *munda*. *Wien. V.*—Or. *munda*. *Steph. Catal. part ii. p. 71. No. 6132.*

Head, thorax, and anterior wings pale griseous-ash, the latter with a dusky spot at the base, a dusky ferruginous striga, before the anterior stigma, angulated beyond the middle, and turning rather suddenly to the base, a flexuous brighter

striga between the stigmata, and an ordinary bent one behind the posterior stigma, between which and the hinder margin is a somewhat pale and undulated one, having two very distinct black spots near its centre, and two griseous ones at its termination on the anal angle: posterior wings fuscous, with pale griseous cilia.

Var. β . *Steph. Catal. l. c.*—Anterior wings pale ferruginous with two contiguous black spots behind, the stigmata nearly obsolete: posterior pale dusky griseous.

Var. γ . Anterior wings deep fuscous, with the ordinary striga very distinct, the reniform stigma with a dusky spot at its apex, the costa with a blackish streak near the tip, and the ordinary geminated black spots very large.

Var. δ . Anterior wings pale ferruginous, with the strigæ very obsolete, and the geminated black spots obliterated.

Caterpillar varied with griseous and black, with a testaceous lateral line: it feeds on the oak, sloe, elm, and fruit trees; changes to pupa about June, and appears in its final state about the middle or end of April.

Rare; but found in several places in the metropolitan district. “Leatherhead and Dorking.”—*W. Raddon, Esq.*, who kindly supplied me with fine specimens of var. β . which have been given as a distinct species, under the name of *O. bimaculata*. “Epping.”—*Mr. H. Doubleday*.

Sp. 5. *sparsa*. *Alis anticis griseo-cinereis atomis fuscis, strigâ arcuatâ punctorum nigrorum aliâque posticâ fusco-albâ.* (Exp. alar. 1 unc. 7—8 lin.)

Bo. *sparsus*. *Haworth*.—Or. *sparsa*. *Steph. Catal. part ii. p. 71. No. 6133.*

Head and thorax hoary-ash, or griseous: anterior wings concolorous, sprinkled with minute fuscous dots, with the ordinary strigæ extremely obscure, except the two outer ones, of which the first is represented by a bent series of black spots, and the second, or posterior one, by a slightly waved fuscous line, margined externally with white or ochraceous; the hinder margin of the wing has sometimes a row of minute black dots: the stigmata are dusky, with the margins pale: the posterior wings cinereous, with a broad fuscous margin: fringe whitish.

The tint of colour differs exceedingly; in some instances the anterior wings approach to bright rusty-griseous, in others they are nearly gray or hoary, and sometimes deep brownish-ash: the strigæ are frequently well defined, and the stigmata are sometimes nearly concolorous with the wings.

Larva green, with a paler lateral and dorsal stripe; it feeds at the tops of willows, drawing the young twigs together, and destroying their vegetation: they change in July, and the imago appears towards the end of April.

Not very common; I have met with it in Copenhagen-fields, flying in the afternoon: at Hampstead, Hertford, &c.; it also occurs in several other places near the metropolis, having been found at Darenth and Coombe woods. “Epping.”—*Mr. H. Doubleday*.

Sp. 6. pallida. *Alis uniformiter pallescentibus, strigâ posticâ rufâ extus albidâ, aliâque punctorum, stigmatibus pallido marginatis.* (Exp. alar. 1 unc. 5—6 lin.)

No. pallida. *Haworth.*—Or. pallida. *Steph. Catal. part ii. p. 71. No. 6134.*

Head, thorax, and anterior wings, of a nearly uniform pale rufous-brown, with the ordinary stigmata having a slender pale margin alone conspicuous: the outer one heart-shaped, and sometimes dusky: between this and the hinder margin is an oblique, nearly straight, rufous striga, margined externally with pale ochraceous, followed by a row of very minute fuscous dots near the hinder margin: cilia short and cinereous: posterior wings rather dusky, with the cilia pale rufescent.

Few specimens only of this rather doubtful species have hitherto occurred, all, I believe, captured within the metropolitan district; I have taken it in Richmond Park:—it closely resembles some of the varieties of the preceding.

Sp. 7. stabilis. *Alis anticis griseo-ferrugineis stigmatibus flavicinctis, strigâ externâ pallidiore fusco adnatâ, margine nigro punctato.* (Exp. alar. 1 unc. 3—6 lin.)

No. stabilis. *Wein. V.*—Or. stabilis. *Steph. Catal. part ii. p. 71. No. 6135.*—*Albin, plate 76. f. e—h.*—*plate 75. f. a—e.* Var. β .

Antennæ ferruginous: head, thorax, and anterior wings rusty-griseous, reddish-gray, or flesh-coloured; the latter with one or two dusky or black spots at the base, the second and third ordinary strigæ rather obsolete, composed of minute fuscous dots, and each arising from a dark costal spot; the fourth slightly repanded, pale ochraceous, margined internally with fuscous; the hinder margin with a row of minute black dots; the stigmata slightly dusky, with pale-yellowish margins; the nervures towards the apex of the wing also yellowish or ochraceous: abdomen pale reddish-ash: posterior wings fuscous, with rufous cilia.

Var. β . *Steph. Catal. l. c.*—Anterior wings with the stigmata united, the pale margins forming a figure of 8.

Var. γ . *Steph. Catal. l. c.*—Anterior wings with the margins of the stigmata, and the posterior striga, more or less rufescent.

The varieties of this inconstant species are endless: in some examples the strigæ are very distinct, in others completely obliterated; some have a broad angulated dusky fascia between the stigmata, others want it: the stigmata are frequently remote, occasionally united, and a third, situated in place of the teliform one of the *Agrotæ*, is frequently indicated by a yellowish hook: the anterior wings are found of a dusky-ash, irrorated with pale and darker atoms, or of a plain hoary-ash; and the posterior margin is sometimes destitute of the row of black spots.

Notwithstanding the appellation which has been given to this species, in contradistinction to that applied to the first, both are equally variable; and were the judgment of authors alone to guide us, their names ought to be reversed,

if such a proceeding were not contrary to rule, the varieties being so considerable that Var. γ . has been lately placed, as a distinct species, in the second division of the genus.

Caterpillar yellowish, with three sulphureous lines; the head blue: it feeds on the oak, elm, beech, lime, poplar, cherry, &c. in the summer; and the imago appears at the beginning of April.

A very common insect, found throughout the metropolitan district, and in other parts of the country. “Epping.”—*Mr. H. Doubleday*. “Netley.”—*Rev. F. W. Hope*.

Sp. 8. *miniosa*. *Alis anticis rufescentibus, strigis tribus undatis maculisque miniaceis; posticis roseo-albidis, puncto medio strigique subobsoletâ pone medium fuscescentibus.* (Exp. alar. 1 unc. 4—6 lin.)

No. *miniosa*. *Wien. V.*—Or. *miniosa*. *Steph. Catal. part ii. p. 72. No. 6136.*

Head, thorax, and anterior wings pale ashy-red, with a mixture of gray; the latter with the base and posterior margin palest, leaving a deep-coloured central fascia (in which the stigmata are situated), broad on the costa, and gradually narrowing towards the inner margin, and bordered anteriorly and posteriorly by a paler striga, accompanied by a fuscous one; between this and the hinder margin is a slightly undulated pale striga, having a series of rufous spots on its anterior margin; the hinder margin itself has a row of minute reddish or fuscous dots; and the fringe is reddish-ash; the stigmata are fuscous, with pale rufous margin: posterior wings rosy-white, with a dusky central spot, and in the females particularly, an interrupted fuscous striga beyond the middle, and a series of reddish lunules on the margin itself: the cilia deep rose colour. This handsome insect varies less than its congeners; there is, however, considerable diversity in the colour of different species, and the strigæ vary in intensity, and slightly in position.

Caterpillar black, with an interrupted yellow lateral line, the head with three strigæ:—it feeds on the oak and birch in May and June; the imago appears about the end of March.

This delicately pretty species is certainly rather uncommon: I have taken the larva occasionally at Darenth-wood, and once in Epping Forest. “Leatherhead.”—*W. Raddon, Esq.*

Sp. 9. *cruda*. *Alis anticis rufo-cinereis, atomis nigricantibus undique adpersis, stigmâ reniforme obscuriore griseo cincto.* (Exp. alar. 11 lin.—1 unc. 3 lin.)

No. *cruda*. *Wien. V.*—Or. *cruda*. *Steph. Catal. part ii. p. 72. No. 6137. Albin, plate 74. f. a—e.*

Head, thorax, and anterior wings rufous-ash, the latter sprinkled throughout with fuscous atoms, the spots at the base largest; the ordinary strigæ very obscure, but the bent one behind the posterior stigma most evident and composed of minute fuscous dots; between which and the posterior margin is a somewhat undulated paler one, frequently composed of detached reddish

lunular spots; the stigmata are rather dusky, with reddish or griseous margins, the anterior one being in general nearly obsolete: cilia dusky, rosy at the tip; abdomen and posterior wings fuscous; fringe rosy.

This varies slightly in the colour of its anterior wings, and in the intensity of its markings; in some specimens the stigmata are remote, in others united: the size also varies considerably.

Caterpillar green or reddish-brown, sprinkled with white on the back, with a yellowish lateral line; head green, irrorated with white and black: it feeds on the oak, wild rose, &c. in June; and the imago appears towards the end of March.

By far the most abundant species of this genus; frequenting all parts throughout the metropolitan district, and occurring copiously on the oaks in Richmond Park. “Epping.”—*Mr. H. Doubleday.*

Sp. 10. pusilla. *Alis anticis griseis stigmatibus contiguis obsolete lineolæque fuscescentibus, strigæque marginali punctorum fuscorum.* (Exp. alar. 1 unc.)

No. pusilla. *Haworth.*—Or. pusilla. *Steph. Catal. part ii. p. 72. No. 6138.*

Smaller than, but similar to, the preceding insect; anterior wings more rounded or retuse, the stigmata less remote, the reniform one larger, more oblong, and darker, with a stout, fuscous, subinterrupted lineola, extending from the base to the anterior stigma, which is wanting in *O. cruda*: abdomen very stout, with a black spot at the apex.

Probably a mere variety of the foregoing insect.

Taken in company with the last described species in Richmond Park.

B. Anterior wings acute at the apex, the hinder margin slightly repanded.
(Antennæ of the males usually ciliated). Flight autumnal.

Sp. 11. litura. *Alis anticis griseo-fuscis, fasciâ obscuriore liturisque marginalibus nigris.* (Exp. alar. 1 unc. 2—6 lin.)

Pl. No. litura. *Linné.*—Or. litura. *Steph. Catal. part ii. p. 72. No. 6139.*

Head and thorax pale griseous-brown; anterior wings darker, with a black transverse costal streak at the base, a second before the middle, from which arises an undulated striga, then two other dusky central spots opposite the stigmata, which are brownish, with whitish margins, and between them is frequently an angulated dusky fascia reaching from the costa to the inner margin; behind the posterior stigma is the usual arcuated striga, and between it and the posterior margin an obscure, but greatly undulated one, arising from an oblique black lineola near the apex of the costa, the space between the two strigæ dusky, forming an arcuated fascia: abdomen, posterior wings, and cilia, dusky.

The colour is deeper, and the markings more distinct in some specimens than in others; and the stigmata are occasionally united.

Caterpillar green or yellowish, with a dusky line on the back, edged with whitish, and a whitish or yellow lateral line; head pale brown: it feeds on

willow, sloc, birch, rose, trefoil, &c. in May and June; the imago is produced in September or October.

Not a common species; taken occasionally in woody situations, and thick bushy hedges: I have found the larva at Darenth-wood, and captured the insect at Hertford. "Epping."—*Mr. H. Doubleday*. "Hebden-bridge, Yorkshire."—*Mr. Gibson*. "Matlock."—*Rev. F. W. Hope*.

Sp. 12. *Pistacina*. *Alis anticis flavo-fuscis aut ferrugineis, pallidè plus minusve lineatis, stigmatibus pallicinctis, priori saturatori; posticis fuscis.* (Exp. alar. 1 unc. 3—6 lin.)

No. *Pistacina*. *Fabricius*.—Or. *Pistacina*. *Steph. Catal. part ii. p. 72. No. 6140.*

Head, thorax, and anterior wings nearly concolorous, yellowish-brown or bright ferruginous; the latter with the ordinary strigæ in general very distinct, and intersected with pale rufous or ferruginous nervures; the stigmata generally distinct, ashy-brown with pale edges; the anterior one very variable in form, in general linear, sometimes ovate, and mostly of a deeper colour than the posterior, which is of a more elongate form than usual; and between it and the hinder margin is usually a striga of black dots: posterior wings deep fuscous, with rufous cilia.

Var. β . *Steph. Catal. l. c.* Ph. No. lineola. *Don. x. pl. 360. f. 2.*—Anterior wings very deep ferruginous, with two obsolete strigæ of fuscous spots before the stigmata, a third near the posterior one, then an obscure darker fascia, and another in the margin.

Var. γ . *Steph. Catal. l. c.*—Anterior wings ferruginous, with the ordinary strigæ very distinct, and several rows of dusky spots between the fifth and the posterior margin.

Var. δ . *Steph. Catal. l. c.*—Anterior wings deep ferruginous, with a series of black spots near the posterior margin, the rest of the wing immaculate.

Var. ϵ . *Steph. Catal. l. c.*—Anterior wings dull ferruginous, with two paler strigæ, the posterior margin deeply fuscous, obsoletely intersected with ferruginous nervures.

Var. θ . Anterior wings pale hoary-ash, tinged with rufous: the ordinary strigæ pale fuscous, and the stigmata deep ashy-brown.

To attempt the description of all the varieties of this truly protean insect, of which those above described have hitherto been considered as distinct species in this country, would be fruitless. I shall merely add, that I have reared several of the varieties from similar larvæ, and that all are found at the same place and season.

Caterpillar green, with a lateral whitish or rufescent streak and pale spots: it feeds on the *Centaurea Scabiosa* and *Ranunculus bulbosus*: the imago appears in September.

An insect of moderate rarity, occurring chiefly at Darenth and Birch woods.

Sp. 13. *lunosa*. *Alis anticis fuscis, vel cinereo-fuscis aut griseo-rufescentibus, strigâ posticâ punctorum nigrorum; posticis flavo-albidis aut fuscescentibus lunulâ centrali fasciâque submarginali fuscis.* (Exp. alar. 1 unc. 4—6 lin.)

No. *lunosa*. *Haworth.*—Or. *lunosa*. *Curtis, v. pl. 237.*—*Steph. Catal. part ii. p. 73. No. 6141.*

Also a variable species: in general the head, thorax, and anterior wings are pale ashy-brown; the latter with the ordinary strigæ nearly obliterated; the stigmata very distinct and fuscous, with a pale margin; behind the posterior one is a pale, slightly undulated striga, followed by one composed of conspicuous, somewhat triangular, black spots, the space between rather fuscous; in the margin itself is a row of minute black spots: the posterior wings are yellowish or ochraceous-white, with a central lunule, and an irregular submarginal dusky or brown fascia, and an interrupted black striga on the margin itself: cilia immaculate, ochraceous, sometimes with a reddish tinge.

Both sexes vary exceedingly: in some the anterior wings are brown, in others griseous-red, or ferruginous, with the ordinary strigæ distinct, and the nervures rather pale; but the posterior striga of black spots is always very distinct: the posterior wings also vary much: I possess one specimen with them nearly fuscous, with the central lunule darker, and another nearly white.

Caterpillar unknown: the imago appears in September.

The phases of this insect are precisely those of the foregoing; it is therefore surprising that writers should not have profited from that fact, and have restored the varieties of the former to their legitimate species, instead of servilely copying from their predecessors; especially after Oechsenheimer had properly reduced the varieties from Esper. Or. *lunosa* is occasionally met with rather abundantly near Birch and Coombe woods: it has also been taken near Hertford, Limehouse, and Stepney. “Common at Kimpton.”—*Rev. G. T. Rudd.* “Marton Lodge, Yorkshire.”—*L. Rudd, Esq.*

Sp. 14. *Lota*. *Alis cinereis, anticis puncto pone medium atro, strigâque posticâ rufâ extus albidâ, stigmatibus rufo-marginatis.* (Exp. alar. 1 unc. 3—6 lin.)

Ph. Bo. *Lota*. *Linné.*—Or. *Lota*. *Steph. Catal. part ii. p. 73. No. 6142.*

Deep cinereous brown: anterior wings with the ordinary strigæ obscure, their origin indicated on the costa by some dusky and paler marks; the stigmata with a slender pale margin, bounded externally with bright rufous, the anterior one generally immaculate in the centre, the posterior with a deep black spot towards the inner edge of the wings: towards the hinder margin is a conspicuous bright rufous striga, edged externally with whitish, and abruptly broken near its origin on the costa: posterior wings fuscous, sometimes with a pale striga near the margin: fringe pale ashy or fuscous.

The anterior stigma has occasionally a black patch in its centre; and at the base of the wings there is frequently a deep black dot.

Caterpillar ash-coloured, with longitudinal white streaks, faintly edged with

black, and a reddish line above the legs:—it feeds on willows, and constructs rather a solid folliculus.

Not a common species: occasionally found in Epping Forest, near Walthamstow, and at Darenth wood. I have also taken it at Hertford, and received it from the New Forest, and Devonshire. "Bottisham."—*Rev. L. Jenyns*. "Kimpton, but rare."—*Rev. G. T. Rudd*. "Hebden-bridge, Yorkshire."—*Mr. Gibson*.

Sp. 15. *flavilinea*. PLATE 19. f. 2.—*Alis anticis rufescentibus, strigâ posticâ rufâ extus flavicante, punctoque basi fusco*. (Exp. alar. 1 unc. 4—5 lin.)

No. *flavilinea*. *Haworth*.—Or. *flavilinea*.—*Steph. Catal. pt. ii. p. 73. No. 6143*.

Head, thorax, and anterior wings rufescent, the latter with the ordinary strigæ very indistinct; the stigmata rather pale yellowish, with the margin slightly rufescent; towards the posterior margin is a rufescent striga, broken towards the costa, as in the foregoing species, and delicately margined externally with pale yellowish; at the base of the wings is a dusky or black dot, and sometimes a second, near the costa: posterior wings fuscous; with the cilia rufescent.

Notwithstanding this species has been hitherto considered as peculiar to Britain, I suspect from *Ochsenheimer's* description and reference to *Engramelle*, that it is the true No. *macilenta* of *Hübner*; and that the following insect, supposed to be the species just mentioned, is the No. *ferruginea* of that author. If it be the No. *macilenta* of *Hübner*, the larva feeds on plantain and chickweed: the imago appears at the end of September, and I have taken it so late as the beginning of December.

Unquestionably a scarce insect near London: I have found it on the palings near Caen Wood, Hampstead; and have received specimens from Brockenhurst in the New Forest; and from Devonshire.

Sp. 16. *macilenta*. *Alis anticis testaceis aut rufescentibus strigis quatuor saturatioribus, punctoque fusco basi stigmati postici*. (Exp. alar. 1 unc. 4—8 lin.)

No. *macilenta*. *Haworth*. Or. *macilenta*. *Steph. Catal. pt. ii. p. 73. No. 6144*.

Head, thorax, and anterior wings testaceous or rufescent; the latter with the strigæ more or less obsolete, the basal one frequently wanting; the second, slightly flexuous before the stigmata, the third behind composed of indistinct lunules; the fourth near the hinder margin, considerably undulated, bright rufous internally, slightly flavescent or ochraceous externally: the stigmata are indicated by slightly rufescent or dusky rings, and the posterior one has a deep brown spot (somewhat dusted with white) at its base: posterior wings fuscous, with a darker central lunule, the costa whitish; cilia rufescent.

There is frequently an angulated broad dusky striga between the stigmata; and the usual strigæ are sometimes of a deep fuscous and very conspicuous.

Caterpillar reddish-brown, with darker spots, with a faint whitish dorsal and lateral streak: it feeds on the elm and oak: the imago appears towards the end of September.

Not very common; I have found several examples near Hertford and at Coombe Wood, and have received the insect from the New Forest. “Bottisham.”—*Rev. L. Jenyns*.

Sp. 17. Upsilon. *Alis anticis cinereo-fuscis lineolâ basi alterâque duplici in medio nigris, stigmatibus pallidis.* (Exp. alar. 1 unc. 3—6 lin.)

No. Upsilon. *Wien. V.*—Or. Upsilon. *Steph. Catal. part ii. p. 73. No. 6145.*

Ashy-brown; anterior wings a little clouded with a deeper tinge; the costa with some dusky points towards the base, and some whitish ones towards the apex: the usual strigæ are obsolete, except the fourth or posterior one, which is pale and considerably undulated, with a few trigonate dusky spots in the middle of its inner margin; at the base of the wing is a black streak, sometimes rather obscure; the stigmata are rather pale with blackish margins, and in the space between is a black mark resembling a Y or V; towards the inner margin is a sort of third stigma, formed by two black lineolæ, which, after uniting, become again detached towards the posterior edge of the wing: the posterior wings are rather paler, with a central lunule and the margin of a deeper colour.

This insect varies considerably; in some examples all the markings are obliterated, except the pale posterior striga: in others the stigmata are of a hoary ash.

Caterpillar dirty brown, with three pale stripes on the back, and some dusky spots on the sides: it feeds on the willow and poplar.

The general appearance of this species, and the habits of the larva, which reside beneath the bark of old willows and poplars, seem to require its separation as a genus.

Not very uncommon in several places near the metropolis; in the marshes near Hertford, and in Battersea and Kentish Town Fields I have frequently captured specimens: it also occurs in Cambridgeshire.

GENUS XCV.—MYTHIMNA, *Ochsenheimer*.

Palpi short, ascending, densely enveloped in scales, the apical joint not exposed; triarticulate, the basal joint scarcely one-third as long as the second, bent; the second very long, slightly attenuated towards the apex, not so stout as the first, a little curved; terminal small, elongate ovate, subacuminate, conic: *maxillæ* as long as the antennæ. *Antennæ* rather moderate, shortest in the females; finely ciliated in both sexes, stoutest and somewhat pubescent beneath in the males: *head* small, with a tuft of scales; *eyes* large, pubescent; *thorax* slightly crested anteriorly: *body* elongate, densely tufted at the apex, and laterally in the male; somewhat obtuse in the females: *wings* slightly deflexed during repose; the anterior entire, acute at the apex, with the stigmata nearly or quite obliterated; *posterior* obsoletely emarginate on the hinder margin; *legs* moderate, femora and tibiæ stout and densely pilose in the males. Larva naked, with longitudinal streaks: pupa subterranean.

The elongated body, acute repanded anterior wings, with obliterated stigmata and simple transverse fasciaform strigæ, the slightly crested thorax, pubescent eyes, and ciliated antennæ, sufficiently indicate the distinction of this genus from the preceding, to which it seems most nearly allied, some species of the last section especially: the species are æstival.

Sp. 1. *turca*. *Alis anticis cinereo-rufis, fusco pulverulentis, lineis duabus fuscis lunulæque albidâ.* (Exp. alar. 1 unc. 8—9 lin.)

Ph. No. *turca*. *Linné.*—*My. turca*. *Steph. Catal. part ii. p. 73. No. 6146.*

The largest species of the genus, of a bright ashy-rufous or ferruginous; the anterior wings minutely irrorated with dusky, with a slightly incurved stout transverse fuscous streak before the middle, and a second, rather undulated and oblique, behind the middle, having a whitish lunule, with a dusky margin between, nearly in the place of the posterior stigma; at the base of the wing is sometimes an abbreviated fuscous striga, and on the hinder margin a series of interrupted black dots: posterior wings fuscous with the margin rufescent; cilia of all the wings rufous: abdomen with the lateral and anal tufts bright rufous.

Caterpillar ochraceous-red; with a whitish dorsal line; beneath yellowish-white, with black streaks on the incisures, which are obscure on the sides; head brown: it feeds on the *Juncus pilosus*:—the imago appears in July.

A rare insect; it has been taken in Epping Forest, near Chigwell-row, and near Bristol: I once found a specimen in the hollow of Coombe Wood, and have seen three or four others captured at the same place.

Sp. 2. *grisea*. *Alis griseo-rufis, puncto medio albo, strigæque arcuatâ posticâ punctorum minutissimorum nigrorum.* (Exp. alar. 1 unc. 5—7 lin.)

No. *grisea*. *Fabricius?*—*My. grisea*. *Steph. Catal. part ii. p. 74. No. 6147.*

Bright griseous-red, the male rather brightest; the anterior wings slightly paler on the inner margin; with an arcuated striga of minute black dots towards the hinder margin, and a small white patch faintly resembling a note of interrogation in the place of the posterior stigma: posterior wings deep fuscous, with the fringe rufous. Male of a shining silvery hue beneath; with a fascicle of deep black hairs at the base of the abdomen.

Caterpillar dirty ochraceous or dusky, with a reddish lateral line; it feeds on chickweed and plantain.

Not a very abundant insect; found occasionally at Darent-wood and in other parts of the metropolitan district; also in the New Forest, and in Devonshire. "Epping."—*Mr. H. Doubleday*. "Bottisham."—*Rev. L. Jenyns*.

Sp. 3. lithargyria. *Alis anticis ochraceo-fuscis strigis duabus obscurioribus, punctoque medio albo.* (Exp. alar. 1 unc. 1—5 lin.)

No. lithargyria. *Esper?*—My. lithargyria. *Steph. Catal. part ii. p. 74. No. 6148.*

Pale ochraceous-brown; the anterior wings with two obscure strigæ, the anterior slightly undulated, the posterior towards the hinder margin and arcuated; between them is a minute white dot; and behind the posterior one the ground-colour of the wing is darker, with an obscure undulated paler striga; the posterior wings are fuscous, with ochraceous or griseous cilia. Male said to be as in the last, beneath.

Caterpillar griseous, with white streaks and black dots, the first segment brown, with three white lines: it feeds on the plantain.

The only example I have seen of this species is in my collection; it was found in July, 1821, near Brockenhurst, in the New Forest.

Sp. 4. conigera. *Alis anticis rufo-ferrugineis strigis duabus fuscis, punctoque medio albissimo trigono.* (Exp. alar. 1 unc. 4—5 lin.)

No. conigera. *Wien. V.*—My. conigera. *Steph. Catal. part ii. p. 74. No. 6149.*

Head, thorax, and anterior wings, ferruginous or yellowish-red; the latter with a somewhat rectangular transverse fuscous striga before the middle, and an oblique and slightly undulated one behind the middle, the stigmata placed between them; the anterior one is slightly apparent and pale; the posterior also pale yellowish red, with a snowy white triangular spot at its base; a somewhat dusky cloud surrounds the posterior stigma; and towards the hinder margin of the wing is a faint undulated striga; posterior wings reddish-brown, with the base palest and the nervures darkest; cilia of all more or less ferruginous. The sexes are similar, but the insect varies much in the intensity of its colours: I possess one of a remarkably deep hue, captured near Ripley.

Caterpillar griseous, streaked with black and whitish; the head brown, the first segment deep black, with three white streaks: it feeds upon chickweed and grasses.

Not uncommon in Darenth-wood; also found at Coombe-wood, near Hertford; in Epping Forest, and in other parts near the metropolis. “Kimpton.”—*Rev. G. T. Rudd.* “Epping.”—*Mr. H. Doubleday.* “Matlock.”—*Rev. F. W. Hope.*

GENUS XCVI.—GRAMMESIA* *mihi*.

Palpi short, scarcely ascending; densely squamous, the terminal joint with its apex only exposed; triarticulate, not very slender, the basal joint above half the length of the second, reniform, contracted at the base, the second sub-

* Γραμμή, linea.

cylindric, terminal, elongate-ovate, somewhat acuminate at the apex, about one-third as long as the second: *maxillæ* as long as the antennæ. *Antennæ* rather long, serrated in the males, simple in the females: *head* and *eyes* small, the latter naked: *thorax* stout, woolly: *wings* slightly deflexed; *anterior* with transverse lines, *stigmata* obscure or wanting; entire, rounded behind, the apex obtuse: *legs* rather short, stout: the femora with dense fascicles of hair. Larva naked: pupa subterranean.

It is not without reluctance that I adopt the present genus, which I have termed *Grammesia*, in allusion to the transverse lines on their anterior wings, which give the insect the habit of *Mythimnæ*, to which genus they are evidently very closely allied; but from the observations under the genus *Dypterygia*, it would be inconsistent to continue the genus *Caradrina* in the artificial state as left by Ochsenheimer. From *Mythimna* the *Grammesia* differ by having the anterior wings obtuse, and by the woolliness of the thorax; and from *Caradrina* by the serrated antennæ of the males, the stoutness of their body, and plain, obscure, transversely lineated wings, by which latter mark they may be readily known from *Segetia*.

Sp. 1. trilinea. *Alis anticis flavo-ant griseo-canis, strigis tribus sesquialterâ fusciscentibus.* (Exp. alar. 1 unc. 3—5 lin.)

No. trilinea. *Wien. V.*—Ca. trilinea. *Steph. Catal. part ii. p. 74. No. 6152.*

Plain flavescent- or hoary-griseous, thickly dusted with minute fuscous atoms; the abdomen rather paler: anterior wings with three distinct transverse dusky strigæ, the first and third of which occupy the place of the ordinary second and fourth strigæ, and the second traverses between the space usually occupied by the stigmata; there is also an abbreviated one at the base: these strigæ vary considerably in their position: the first is slightly undulated, the second a little bent towards the costa, and the third somewhat arcuated; and in general they are equidistant. Posterior wings fuscous, with pale griseous cilia.

Var. β . *Steph. Catal. l. c.*—Differs in having the strigæ approximating towards the inner margin of the wing, and the basal one nearly obsolete.

Var. γ . *Steph. Catal. l. c.*—With the basal half of the wing to the central striga pale rufo-griseous, the posterior half deep ashy- or rufous-brown; the central striga very stout.

Caterpillar ashy-gray, with pale lateral stripes: it feeds on the plantain.

Found, not very uncommonly, in Coombe and Darenth-woods; also at Hertford, and near Ripley; Var. γ is however less frequent.

Sp. 2. bilinea. *Alis anticis fusco-griseis, strigis duabus rectis, stigmatibus obsolete interjectis.* (Exp. alar. 1 unc. 4—5 lin.)

No. bilinea. *Hübner.*—Ca. bilinea. *Steph. Catal. part ii. p. 74. No. 6153.*

Of a deeper colour than the foregoing; which it remotely resembles: anterior

wings griseo-fuscous, with two nearly straight dusky strigæ, accompanied by two paler ones; the basal one placed before the middle, the second towards the hinder margin; between these is placed an obsolete reniform stigma: posterior wings fuscous, with the cilia rufous. The female is of a darker colour, with the strigæ less evident.

Caterpillar unknown.

Few examples of this rare species have yet been detected in Britain. In July, 1815, I fortunately captured a female (the only one I have seen) in Coombe-wood; and I have seen others which have been taken near Birch-wood. "Epping."—*Mr. H. Doubleday.*

GENUS XCVII.—SEGETIA *miki*.

Palpi slightly ascending, densely clothed with squamose hair; the terminal joint exposed; triarticulate, the basal joint reniform, stouter than the following; the second as long again as the first, a little attenuated towards the apex; terminal minute, ovate, obtuse: *maxillæ* about the length of the antennæ. Antennæ moderate, stout and ciliated in the males, slender and simple in the females: *head* small: *eyes* naked: *thorax* stout, woolly, not crested: *wings* slightly deflexed, short; anterior obtuse and rounded posteriorly, with distinct stigmata: *body* rather short, the male with a tuft at the apex; the female with the apex acute: *legs* with the femora very pilose. Larva naked; *pupa* subterranean.

Ochsenheimer includes the two species of this genus amongst his *Mythimnæ*, forming a section for their reception; but the general habit of the insects, and their autumnal flight, seems to indicate more than a sectional distinction; and if we are to consider the *outline* of any importance in the discrimination of Lepidopterous genera, the dissimilar form of the wings, exclusively of other characters, at once points out their generic pretensions: the different proportions of the palpi, naked eyes, abbreviated anterior wings and body, the former with distinct stigmata, may be pointed out as evident characters to separate the genus from *Mythimna*.

Sp. 1. *xanthographa*. *Alis anticis castaneis aut subfuscis strigis obsoletis tribus saturatioribus stigmatibus ordinariis pallidis.* (Exp. alar. 1 unc. 3—5 lin.)

No. *xanthographa*. *Wien. V.*—Se. *xanthographa*. *Steph. Catal. part ii. p. 74. No. 6150.*

A variable species: head, thorax, and anterior wings castaneous or dusky, sometimes deep fuscous; the latter with an abbreviated striga at the base, then an irregular one before the stigmata, which are usually pale-yellowish or lutescent, followed towards the hinder margin with a third bent one, formed of minute black spots or connected lunules; between which and the

hinder margin is a slightly undulated pallid streak, edged internally with dusky: cilia fuscous: posterior wings in the male whitish, with the margin more or less fuscous; cilia ochraceous; in the female dusky, with pale cilia.

The stigmata are sometimes but little paler than the wings, and have frequently a quadrate dusky or black spot between them: the colour of the wings varies excessively, and the intensity of the markings; in some examples there is a fuscous streak between the stigmata, as in many of the *Orthosia*.

Caterpillar dirty yellow, with a pale lateral line, and black streaks and dots behind; head brown, with three dusky streaks: the insect appears in August.

An abundant species throughout the metropolitan district; I have also found it near Hastings, Brighton, and Dover, and in the Isle of Wight. “Netley, Salop, in plenty.”—*Rev. F. W. Hope*. “Epping.”—*Mr. H. Doubleday*.

Sp. 2. neglecta. PLATE 21. f. 2. *Alis anticis obscure cinereis, strigis e punctis minutissimis atris, stigma postica maculâ fuscâ.* (Exp. alar. 1 unc. 7—9 lin.)

No. neglecta. *Hübner*.—Se. neglecta. *Steph. Catal. part ii. p. 74. No. 6151.*

Head, thorax, and anterior wings, obscure cinereous, sometimes tinted with rosy, and thickly irrorated with very minute fuscous dots; the ordinary strigæ obliterated, and in place of the third an arcuated series of minute black spots, between which and the hinder margin is a slightly undulated striga, dusky within, and pale without: cilia slightly tinted with rosy; posterior stigma with a dusky spot; anterior nearly obsolete: posterior wings fuscous, with the base rather paler, and a darker lunule in the centre.

Rare, at least near London: the only example that I remember to have been captured in the metropolitan district was found in September, 1816, at Birch-wood, and is in my collection. The male, whence the accompanying figure was designed, was captured in the New Forest by J. C. Dale, Esq. “Near Ringwood, in September.”—*Messrs. Bentley and Chant*.

GENUS XCVIII.—CARADRINA, *Ochsenheimer*.

Palpi rather short, somewhat porrect, a little ascending, squamose, the terminal joint exposed at the apex; triarticulate, slender, basal joint reniform, about one-third the length of the second, which is very long, slightly bent, and a little narrowed towards the apex; terminal, minute, ovate-obtuse: *maxillæ* not longer than the antennæ. *Antennæ* slender, more or less ciliated in both sexes: *head* small, densely squamose: *eyes* small, naked: *thorax* moderately stout, obsoletely crested: *wings* slightly deflexed, entire, very glossy; *anterior* with strigæ and distinct stigmata: *body* rather slender, acute at the tip in the female, tufted in the males: *legs* rather short, not very stout: *femora* with moderate fascicles of hair. Larva naked: pupa subterranean.

Ochsenheimer includes *Grammesia* in his genus *Caradrina*; but those insects, as before mentioned, differ too considerably to allow of their remaining associated with the following, which, in addition to the slenderness of their bodies, may be known by the glossiness of their wings, the conspicuous stigmata and strigæ which adorn the anterior ones, the simplicity of the antennæ in both sexes, and the great disproportion of the articulations of the palpi. The genus may be conveniently divided into two sections; the first embracing those species which have the body rather stout, and all the wings of a deep or dusky hue; the latter, such as have the body slender with the posterior wings nearly white, as indicated in my Catalogue.

Sp. 1. *ambigua?* *Alis anticis griseo-fuscescentibus strigis tribus obsoletis fuscis aliâque posticâ pallescente, stigmatibus albo marginatis.* (Exp. alar. 1 unc. 4—5 lin.)

No. *ambigua?* *Fabricius.*—Ca. *ambigua?* *Steph. Catal. part ii. p. 75. No. 6154.*

Head, thorax, and anterior wings griseous-brown; the latter with three obsolete darker strigæ, the third composed of distinct dusky or black dots, the second placed obliquely, and considerably waved: the stigmata of a deeper hue than the wing, with a slender pale margin; between the posterior one and the hinder margin of the wing is an undulated pallid striga: the posterior wings are whitish, tinged with dusky towards the margin in the male, and brownish in the female.

Caterpillar ferruginous, varied with brown, with a brown head: it feeds on the dandelion and plantain: the imago appears in June.

This and the following insect are too closely allied to each other to be distinct species, but, at present, I am not prepared, from experience, to unite them. They inhabit the same woods, and appear simultaneously, but their differences appear sufficient to constitute species: I have, therefore, with Mr. Haworth, considered them as distinct.

Found in the lanes near Darent-wood, and on the skirts of the wood itself, and in other places throughout the metropolitan district; but not common.

Sp. 2. *redacta.* *Alis fusco-griseis, strigis tribus obsoletis saturatioribus aliâque posticâ pallescente, stigmatibus albido marginatis.* (Exp. alar. 1 unc. 2—4 lin.)

No. *redacta.* *Haworth.*—Ca. *redacta.* *Steph. Catal. part ii. p. 75. No. 6155.*

Less than the foregoing, and very similar thereto, but the markings more obsolete, and wings of a darker hue; the pale striga towards the hinder margin very much waved: the posterior wings fuscous, dusky in the female.

Very closely allied to the preceding, of which I cannot but imagine it to be a small and deep-coloured variety. Mr. Haworth says, its "chief difference is that of dimensions;" and truly adds, "that in this obscure section (genus)

constancy of appearance is of more consequence in determining a species, than a few varieties in the markings."

Found with the preceding species in the metropolitan district: near Darenth-wood especially, where I have taken it abundantly. "Netley and Matlock."—*Rev. F. W. Hope.*

Sp. 3. Alsines. *Alis anticis fuscescentibus, stigmatibus ordinariis faciâque mediâ obscurioribus, strigâ externâ dilutiori.* (Exp. alar. 1 unc. 2—3 lin.)

No. Alsines. *Borkhausen.*—Ca. Alsines. *Steph. Catal. part ii. p. 75. No. 6156.*

Closely allied to the last; from which it differs in being of a darker hue, with the ordinary stigmata distinct and brown, with faint pale edges, and having an obscure angulated striga passing between them: the pale striga towards the hinder margin of the wings is scarcely undulated, and in some examples is nearly straight: the posterior wings are dusky, especially in the females.

Caterpillar ashy-gray, with reddish lateral line and brown head: it feeds on plantain: the imago appears in June.

Not very common, frequenting gardens: found throughout the metropolitan district. I have received the insect from the New Forest and from Devonshire.

Sp. 4. *implexa.* *Alis anticis griseo-ferrugineis strigis quatuor saturatoribus undâque valdè undulatâ pallidiori; stigmatibus fuscis.* (Exp. alar. 1 unc. 1—2 lin.)

No. *implexa.* *Hübner?*—Ca. *implexa.* *Steph. Catal. part ii. p. 75. No. 6157.*

Paler than the preceding insect: head, thorax, and anterior wings rusty or yellowish-griseous, with four distinct darker or fuscous strigæ, the first abbreviated at the base, the second rather oblique and considerably undulated, the third placed between the stigmata, broad and subrectangular; the fourth much arcuated, composed of lunules, and placed behind the posterior stigma; between which and the hinder margin is a distinct and strongly waved pale one, edged internally with fuscous; on the margin itself is an interrupted black line: posterior wings pale ochraceous brown, the base paler, the hinder margin with an interrupted black line, as in the anterior wings.

Known by its paler hue, and the distinctness and number of the transverse strigæ on the anterior wings, and especially by the greater undulation of the pale posterior striga.

I have frequently captured this insect at Darenth-wood, particularly one evening in July, 1820, when, in company with my late friend, Mr. Blunt and his brother, the Rev. W. Blunt, we secured nearly 800 specimens of Noctuidæ, in less than four hours, amongst which were no less than 51 species, including, amongst others equally rare, two examples of *Thyatira batis*.

Sp. 5. lævis. *Alis cano subrufescentibus, strigis obsoletissimis punctoque medio fusco, posticis perfuscis.* (Exp. alar. 1 unc. 3—4 lin.)

No. lævis. Haworth.—Ce. lævis. *Steph. Catal. part iii. p. 75. No. 6158.*

Very obscure: the strigæ nearly as in *Se. xanthographa*, but more slender and obsolete, scarcely visible unless with a lens: the anterior stigma wanting; the posterior reniform, the margin alone apparent, with a black dot at its base: the cilia of the anterior wings dull reddish, of the posterior paler.

Of this and the following species I have given Mr. Haworth's description, as they do not appear to me really distinct from *Ca. Alsines*, of which *Ca. implexa* may also prove to be an extraordinary variety only, as indicated in my Catalogue.

Taken at Darenth wood and near London, in the beginning of July.

† Sp. 6. sordida. *Alis sordido-rufescentibus strigis duabus obsoletissimis punctoque pone medium fuscis.* (Exp. alar. 1 unc. 4 lin.)

No. sordida. Haworth.—Ca. sordida. *Steph. Catal. part ii. p. 75. No. 6159.*

“Anterior wings rufescent, with two nearly obliterated strigæ behind the middle: the ordinary stigmata extremely obsolete, the margin alone visible; the anterior orbicular; the posterior reniform, fuscous on its inner side: on the posterior margin of the wing is a series of minute spots: the posterior wings are paler.”

Described nearly as above by Mr. Haworth, from a specimen in the collection of the late Mr. Jones: I have never seen the insect, neither am I aware of its locality.

Sp. 7. Morpheus. *Alis anticis cinereo-ochraceis maculis ordinariis fasciâque externâ obscurioribus; posticis albidis.* (Exp. alar. 1 unc. 3—4 lin.)

Ca. Morpheus. *Ochsenheimer?*—*Steph. Catal. part ii. p. 75. No. 6160.*

Pale-ochraceous or flavescent-ash, with the base and posterior margin of the anterior wings beyond the ordinary arcuated striga of a deeper colour or fuscous, the stigmata of the same hue, and a few obscure fuscous clouds, being the rudiments of strigæ, on the disc: posterior wings pale yellowish-white, with the margin and a central lunule dusky: head, thorax, and abdomen concolorous griseous-ash.

The insect from which the above description was drawn up appears to differ so considerably in colour from all my specimens of the following species, that I am induced to consider it as distinct, especially as there are other and similar examples, captured at the same time and place, in the collection at the British Museum: they resemble the figure referred to by Ochsenheimer, in the *Papillons d'Europe*, as his *Ca. Morpheus*, which he considers synonymous with the *No. Sepii* of Hübner.

Taken in Devonshire; and I once captured the female at Hertford.

Sp. 8. Sepii. *Alis anticis griseis nebulosis, fasciâ posticâ undatâ stigmatibusque subdistinctis maculæformibus fuscis; posticis albidis.* (Exp. alar. 1 unc. 2—4 lin.)

No. Sepii. *Hübner*.—Ca. Sepii. *Steph. Catal. part ii. p. 75. No. 6161.*

Head, thorax, abdomen, and anterior wings deep fuscous or griseous, the latter clouded with dusky or fuscous, with spots of the latter colour on the costa; the ordinary strigæ are confused with the fuscous clouds, and the stigmata are rather indistinct; behind the posterior stigma is a broad dusky fascia, edged externally with an undulated pale clouded fimbria, which reaches to the edge of the wing, where it is obscurely spotted with fuscous: posterior wings rather large, ochraceous-white, with a slightly dusky central spot and a marginal fascia; cilia pale ochraceous.

This species varies a little in size and colour.

Caterpillar reddish-brown, with a yellowish dorsal line and reddish lateral streaks: it feeds on the *Convolvulus sepium*: the imago appears in June.

A common species in gardens, on the borders of woods, and in shady lanes, throughout the metropolitan district.

Sp. 9. *cubicularis*. *Alis anticis canescentibus nebulosis, punctis quatuor marginis anterioris nigris, strigâque posticâ undulatâ subrufâ extus pallidâ: posticis albidis margine fusco.* (Exp. alar. 1 unc. 1—3½ lin.)

No. *cubicularis*. *Wien. V.*—Ca. *cubicularis*. *Steph. Catal. part ii. p. 75. No. 6162.*

Head and thorax hoary-ash; anterior wings the same, clouded with fuscous, the ordinary strigæ rather indistinct; the costa with four conspicuous black spots towards the base, placed equidistantly, the fourth opposite to the posterior stigma; the stigmata small dusky; the reniform one more or less spotted on its edge with pure white, especially towards the inner margin of the wings; between this stigma and the hinder margin is first the ordinary bent striga, composed of lunate dusky marks; and, secondly, an undulated pale striga, usually bordered on its inner margin with triangular arrow-shaped red spots; the hinder margin, except the anal angle and the cilia, fuscous: posterior wings whitish, with the hinder margin and the nervures at the apex dusky.

This species varies exceedingly: in some examples the strigæ are nearly all obliterated, and in others they are remarkably distinct: the rufous spots towards the hinder margin of the anterior wings are sometimes wanting, while occasionally they are nearly united into a broadish rufous striga; all the varieties however are characterized by the four dark spots on the costa.

Caterpillar feeds on the *Valeriana Locusta*: the imago is found in the middle of June.

Common in gardens and meadows throughout the metropolitan district. I have captured the insect in Birch-wood.

Sp. 10. *superstes*. *Alis anticis cinereo-canescentibus fusco pulverulentibus strigisque punctatis; posticis albidis.* (Exp. alar. 1 unc. 3—4 lin.)

Ca. *superstes*. *Ochsenheimer?* *Steph. Catal. part ii. p. 75. No. 6163.*

Rather larger than the last, which it greatly resembles: the head, thorax, and anterior wings are of a hoary ash, the latter clouded with dusky, and irrorated, especially towards the base, with fuscous; stigmata very small, the anterior fuscous, minute, the posterior slender, sublunate, internally pale, with a minute white dot on its edge; between this and the hinder margin is an undulated striga, rufescent interiorly and pale without, the margin itself midway from the posterior stigma is fuscous, slightly clouded with cinereous, with a series of subtrigonal dusky or black dots on the extreme edge; cilia ashy-brown: posterior wings whitish, with the nervures and margin dusky: cilia ashy-white.

Found in similar places with the foregoing, but much less frequent.

Sp. 11. *glareosa*. **PLATE 21. f. 1.**—*Alis anticis cinerascentibus, maculâ subquadratâ nigrâ inter stigmatâ ordinariâ, strigisque duabus costalibus abbreviatis, interruptis, versus basin; posticis albis.* (Exp. alar. 1 unc. 2—4 lin.)

No. *glareosa*. *Esper.*—Ca. *glareosa*. *Steph. Catal. part ii. p. 75. No. 6164.*

Head, thorax, and anterior wings, pale hoary-ash; the latter with an abbreviated striga at the base, composed of two black streaks; between which and the anterior stigma is a second striga, composed of three distinct spots, the central one being triangular and largest, and from the third an obscure dusky line, with a pale internal edge, traverses the wing to the inner margin; between the posterior stigma and the hinder margin are two pale strigæ, the first edged internally with pale fuscous, and slightly bent; the second very faint, and a little undulated; the space between sometimes dusky; on the hinder margin is a row of faint cinereous spots; the stigmata are large, pale, and indistinct, and between them is a subquadrate or triangular black spot: posterior wings and cilia white, with a yellowish tinge: antennæ griseous.

This beautiful insect, which is admirably represented in Plate 264. f. 416 a. of the *Papillons d'Europe*, has not been very frequently met with in England: my specimens were captured in the neighbourhood of Birch-wood; others have been taken, I believe, in the New Forest, and one in Devonshire.

GENUS XCIX.—GLÆA, *Hübner*.

Palpi very short, porrect, horizontal, triarticulate, not very robust, clothed with elongate scales, the terminal joint concealed; the basal joint nearly as long as the second, a little bent, the second more slender than the first, slightly curved, and narrowed towards the tip; terminal joint minute, ovate, obtuse: *maxillæ* shorter than the antennæ. *Antennæ* rather long, stout, generally

simple in both sexes and ciliated; sometimes a little serrated in the males: *head* small, with a dense tuft of hair between the antennæ: *eyes* small, naked: *wings* generally entire, incumbent, anterior more or less castaneous: *thorax* stout, pilose, with an abbreviated dorsal tuft towards the front: *body* generally depressed, with the sides and apex considerably tufted: *legs* moderate; femora not very pilose. Larva naked, or slightly hairy; pupa subterranean.

The Glææ of Hübner may be known from the foregoing genera by their depressed bodies and bright castaneous hue; and, like the Caradrinæ, their wings are very glossy: they are chiefly autumnal insects, but the first species is vernal: by their flattened bodies they resemble the Amphipyra and Pyrophilæ, but they may be readily known from those genera by their stout, elongate antennæ, abbreviated horizontal palpi, central thoracic tuft, &c. Oechsenheimer has discarded Hübner's name for this genus, and applied that of *Cerastis*; his reason for so doing I am not aware of; but as it is contrary to the precepts of the best naturalists to use the names employed in other departments of nature—upon which point Fabricius remarks strongly, “nomina absurda insectis plurimis ab idiotis imposita sunt,” instancing *Cervus volans* (*Lucanus*), *Ursus* (*Bombyx*), *Leopardus* (*Sphinx*), &c.—it is obviously advisable to revert to the original name, as *Cerastis* was originally employed to designate a serpent.

A. The body scarcely depressed. (Antennæ slightly serrated in the male.)

Sp. 1. *rubricosa*. *Alis anticis rufis costâ usque ad medium pallidiore maculis quatuor fuscis, ad apicem concolore punctis tribus albidis.* (Exp. alar. 1 unc. 4—6 lin.)

No. *rubricosa*. *Wien. V.*—Gl. *rubricosa*. *Steph. Catal. part ii. p. 76. No. 6165.*
—No. *rufa*. *Entom. Trans. pl. 5. fig. sup.*

A beautiful and variable species: head, thorax, and anterior wings bright castaneous red; the two former immaculate, the latter, sometimes of a deeper hue, and prettily marbled with bluish; the costa generally pale from the base to a little beyond the middle, with four distinct fuscous spots; the apex concolorous with the wings, with three minute white dots; the ordinary strigæ are rather obsolete, and of a paler hue than the wing; the anterior stigma is round and apparent, the posterior one rather large and obscure: the posterior wings are reddish-brown, the cilia rufescent; the abdomen is castaneous-red on its sides and apex.

Caterpillar griseous, with a pale dorsal hue, each segment with two white dots; it feeds on the *Rumex acutus*: the imago appears towards the end of March.

Of this rare insect several specimens were captured at Beachamwell in the spring of 1817, by J. Scales, Esq., who kindly supplied me with a series: it was also taken about the end of March, 1820,

by my late friend E. Blunt, Esq., at Darenth-wood; in which locality it has likewise been found within these two years.

B. The body depressed. a. *Wings entire.*

† Sp. 2. *rubiginea. Alis anticis flavis ferrugineo undatis, punctis numerosis irregularibus fuscis.* (Exp. alar. 1 unc. 4 lin.)

No. *rubiginea. Wien. V.—Gl. rubiginea. Steph. Catal. part ii. p. 76. No. 6166.*

Head and thorax immaculate rusty-yellow; anterior wings griseous-yellow, with several undulated ferruginous strigæ, and numerous irregular fuscous spots, especially towards the hinder margin; the ordinary strigæ are also present, and at the base of the posterior stigma is a large and more conspicuous black spot: posterior wings fuscous, with the cilia fulvous.

Caterpillar slightly hairy, brownish, with a black spotted longitudinal dorsal line, the hirsuties griseous.

The only indigenous specimen of this very distinct and conspicuous species that has come beneath my observation was obtained by Dr. Leach from a friend in the country (but I know not the exact locality), and by him deposited in the collection at the British Museum.

Sp. 3. *Vaccinii. Alis anticis ferrugineis venosis fusco strigatis, strigæque posticæ punctorum fuscorum.* (Exp. alar. 1 unc. 3—4 lin.)

Ph. No. *Vaccinii. Linné.—Gl. Vaccinii. Steph. Catal. part ii. p. 76. No. 6168. Albin. pl. xxiii. f. 34.*

Head, thorax, and anterior wings dusky ferruginous, the latter with the nervures paler, with a fuscous striga, accompanied by a paler one before, and a second arcuated one behind, the stigmata: there is also a bent one between the stigmata; towards the hinder margin is a series of fuscous dots, placed on an irregular broad pale-castaneous fascia: cilia fusco-ferruginous, with paler trigonate spots at the base: stigmata, with the margin alone, conspicuous; posterior one with a black spot at the base: posterior wings of a glossy reddish-brown, with rufous cilia.

The tint of colour and the intensity of the markings vary greatly: some of the varieties approach so very closely to the two following species, that I cannot but consider all of them as belonging to one variable insect; but as I am not certain, I have preferred following Hübner and Haworth, to uniting them without satisfactory proof of their identity.

Caterpillar rusty-brown, with a paler lateral line, the collar and tail black, striated with white: it feeds on the black and red whortleberries (*Vaccinium Myrtillus* and *V. Vitis idæa*), bramble, &c.: the imago is produced in September.

Not uncommon in woody places near London: at Darenth and Peckham woods I have frequently taken it in the larva state; and

also at Hertford and Ripley. It is found in Norfolk and in Devonshire.

Sp. 4. *spadicea*. *Alis anticis fusco-spadiceis vix nebulosis, stigmatе postico basi fusco.* (Exp. alar. 1 unc. 3—4 lin.)

No. *spadicea*. *Hübner*. Gl. *spadicea*. *Steph. Catal. part ii. p. 76. No. 6169.*

Haworth says of this species: anterior wings nearly of an uniform, somewhat castaneous, hue, a little clouded with fuscous, the costa, towards the hinder margin, with a few pallid spots, as in several others: in other respects similar to the foregoing (Gl. *Vaccinii*).

There is something in the aspect of this insect which gives it the appearance of being distinct; an opinion which Dennis and Schiffermüller, Hübner, Haworth, and others, have entertained, though I suspect improperly. Ochsenheimer unites it with Gl. *Vaccinii*.

Found with the preceding throughout the metropolitan district, not uncommonly.

Sp. 5. *subnigra*. “*Abdomine maris subdepresso, alis (anticis) castaneo-nigris fasciâ pallidâ posticâ subinterruptâ, ex maculis confluentibus.*”—Haw. (Exp. alar. 1 unc. 3—4 lin.)

No. *subnigra*. *Haworth*.—Gl. *subnigra*. *Steph. Catal. part ii. p. 76. No. 6170.*

Abdomen less depressed than in the two last and following species: thorax and anterior wings of one colour (castaneous black), with the costa towards the hinder margin a little spotted with white (the wings near the hinder margin with a pale subinterrupted fascia): posterior wings fuscous, the cilia scarcely rufescent.

This is also a doubtful species: the above is nearly the description of Mr. Haworth, who first gave it as distinct; but I conceive it may be only a suffused variety; of which I have seen at least a dozen examples.

Inhabits the same places, and taken at the same time, as the two preceding insects, but rarely.

Sp. 6. *polita*. *Alis fusco-ferrugineis nitidulis strigis venisque reticulatim cinereo-pulverulentibus.* (Exp. alar. 1 unc. 3—4 lin.)

No. *polita*. *Wien. V.*—Gl. *polita*. *Steph. Catal. part ii. p. 77. No. 6171.*

This differs from Gl. *Vaccinii* in having the wings rather more glossy and dusky; the anterior with the nervures pale rusty-ash, with a row of ferruginous spots towards the hinder margin: in other respects similar to the insect just mentioned.

Caterpillar pale testaceous, with scattered black dots: it feeds on the *Taraxicum* according to Schiffermüller, who, with Hübner and others, considers the insect distinct from Gl. *Vaccinii*. Ochsenheimer appears doubtful upon the point, but Treitschke unites them.

Also taken in company with the three last described, but less abundantly than the two first.

b. *Anterior wings dentate.*

Sp. 7. *Satellititia. Alis anticis dentatis brunneis aut rufo-castaneis fusco strigatis, maculâ subtriangulari pallidiori inter punctula duo.* (Exp. alar. 1 unc. 4—7 lin.)

Ph. No. *Satellititia*, Linné. Don. v. pl. 168.—Gl. *Satellititia*. Steph. Catal. part ii. p. 76. No. 6167.

A most variable insect: the head, thorax, and anterior wings are usually brown, more or less tinted with castaneous: the latter are slightly dentate on the hinder margin, and somewhat obscurely strigated, the strigæ placed as usual, the posterior one being considerably waved; the anterior stigma is scarcely visible, or completely obliterated, and in place of the posterior one is a somewhat triangular spot, with two minute dots placed opposite the hinder angles; those spots vary exceedingly in colour, being snowy white, yellow, luteous, castaneous, or pale fuscous, with all intermediate shades, but invariably paler than the ground colour of the wing, which also varies in different examples: the posterior wings dusky, with rufous cilia.

Caterpillar black or greenish, with a narrow whitish lateral line, and some yellowish marks on the collar and anal segment: it feeds upon various plants, such as the bramble, sloe, gooseberry, oak, beech, &c., and does not hesitate to attack other larvæ, sparing not even its own species, whence it has obtained the name of the "*Monster*," in common with the larva of *Cosmia trapetzina*: the imago (called the *Satellites*, in allusion to the spots on the anterior wings,) is found toward the middle or end of September.

An insect of universal occurrence throughout the metropolitan district: it is also found in the New Forest, and in Devonshire. "Epping."—*Mr. H. Doubleday.*

GENUS C.—AMPHIPYRA, *Ochsenheimer.*

Palpi elongate, triarticulate, recurved above the head, clothed with short compact scales, elongated on the basal joint, the terminal joint very long, exposed, acute, and distinct; basal joint shorter than the terminal, reniform, second as long again as the first, and more robust, slightly bent, obliquely truncate at the apex; terminal slender, acute; *maxillæ* scarcely so long as the antennæ. *Antennæ* rather short, slender, slightly ciliated in both sexes: *head* small, with a short pointed crest; *eyes* large, rather prominent, naked: *thorax* not crested, somewhat depressed: *wings* very glossy, anterior denticulate, incumbent; posterior of brilliant hue: *abdomen* rather depressed, especially in the females; both sexes with pilose tufts on the sides and at the apex: *legs* rather stout. Larva naked, with a pyramidal elevation in the anal segment: pupa folliculated.

Amphipyra, the following genus, and *Dypterygia*, are remarkable from having the palpi somewhat recurved; this genus may, however, be readily known by the superior length of their terminal joint, and

by the compactness and smoothness of the scales which clothe the palpi throughout; also by the lively colouring, especially of the posterior wings.

Sp. 1. *pyramidea*. *Alis anticis fuscis, strigis tribus undatis repandis, maculæ ocellari flavescens; posticis cupreis, costâ latissimè fuscâ.* (Exp. alar. 1 unc. 8 lin. —2 unc.)

Ph. No. *pyramidea*. *Linn.*—*Don*. vi. pl. 193.—*An. pyramidea*. *Steph. Catal.* part ii. p. 77. No. 6172.

Head, thorax, and abdomen fuscous; the lateral tufts on this last of a deeper hue, with pale tips; anterior wings deep fuscous, more or less varied with griseous, with three undulated repanded yellowish strigæ, edged with fuscous; the first before the middle of the wing, the second behind the middle, the last towards the hinder margin; between the two first the anterior stigma, which alone is visible, is placed; this is yellowish, with a black or fuscous pupil; posterior wings bright copper-colour, with the anterior margin fuscous. This beautiful insect varies exceedingly; in some specimens the general colour is pale griseous-yellow, with the usual markings; in others of a deep fuscous, with the posterior wings of a dingy copper-colour.

Caterpillar green, with a whitish dorsal and lateral line, and a large conical protuberance on the anal segment:—it feeds on the oak: the imago is found in the beginning of August.

Not very abundant near London; found sometimes in beating the oaks in Coombe-wood, Richmond Park, and Epping Forest: in great profusion near Brockenhurst, in the New Forest, during the summer of 1821. “Epping.”—*Mr. H. Doubleday*. “Coleshill.”—*Rev. W. T. Bree*. “Stoke Bliss, Herefordshire.”—*Rev. F. W. Hope*.

GENUS CI.—PYROPHILA *miki*.

Palpi rather elongate, recurved, triarticulate, clothed with short velvety scales, the terminal joint short, stout, conical, obtuse, about half the length of the basal, which is slender, considerably bent, above half the length of the second; the latter rather stouter than the basal, slightly curved, obliquely truncate at the apex: *maxillæ* not so long as the antennæ: *antennæ* rather long, very slender, slightly ciliated in both sexes: *head* moderate, with a dense crest between the antennæ: *eyes* rather prominent, naked: *thorax* not crested: *wings* incumbent, entire, very glossy, stigmata obsolete, colours uniform; posterior somewhat metallic, obscurely indented: *abdomen* depressed, especially in the females, with a tuft at the apex: *legs* moderate: *tibiæ* rather stout. Larva naked, without any caudal appendage: pupa foliiculated.

Pyrophila may be known by the sombre colours which tint its glossy wings, combined with the recurvation of its palpi: from

Amphipyra it may be distinguished by the shortness of the terminal joint of the palpi in their natural state, as well as by its colours, and the absence of stigmata. From the two following genera the shortness of the clotting of the palpi, exclusively of other differences, obviously characterize it; its metamorphosis is also dissimilar.

Sp. 1. *Tragopogonis*. *Alis anticis murino-fuscis punctis nigris tribus approximatis in medio; posticis lividis.* (Exp. alar. 1 unc. 3—4 lin.)

Ph. No. *Tragopogonis*. *Linné.*—Py. *Tragopogonis*. *Steph. Catal. part ii. p. 77. No. 6173.*

Head, thorax, and abdomen immaculate mouse-coloured brown; anterior wings of the same colour, with three black spots in the middle, one in the place of the usual anterior stigma, the others placed transversely in lieu of the posterior stigma; between these and the hinder margin is an obscure, slightly waved, pale fascia: posterior wings of a livid brown, with the hinder margin darker. Caterpillar green, with five longitudinal white lines, and a few whitish spots on the sides: it feeds on the Goatsbeard (*Tragopogon pratense*), Spinach, Dock, Larkspur, &c.:—the imago is produced in June.

Not very uncommon: I have repeatedly taken the larvæ at Hertford, and the imago occasionally at Darent-hood. “Coles-hill and Allesley.”—*Rev. W. T. Bree.*

Sp. 2. *tetra*. *Alis anticis perfuscis punctis tribus obsoletis fuscis, quatuorque costalibus albis; posticis cinereo-ferrugineis.* (Exp. alar. 1 unc. 4—5 lin.)

No. *tetra*. *Fabricius.*—Py. *tetra*. *Steph. Catal. part ii. p. 77. No. 6074.*—Ph. No. *Tragopogonis*. *Don. vii. pl. 223. f. 2?*

Very closely allied to the last: head and thorax as in that insect; abdomen cinereous; anterior wings of a deep brown, with three very obsolete dusky spots in the centre, and four distinct white ones on the costa towards the apex: posterior wings rusty-ash.

Caterpillar green, with a whitish dorsal and two reddish lateral lines; the head small: it feeds on various plants, and is supposed to attack apiaries:—the imago is found in June.

Not common near London; frequenting gardens: I have received specimens from Bristol and Devonshire. “Epping.”—*Mr. H. Doubleday.*

GENUS CII.—NÆNIA *mihi*.

Palpi rather long, porrect, ascending, triarticulate, the two basal joints clothed with elongate capitate scales, terminating in an acute point anteriorly, at the apex of the second joint, apical joint slender, elongate, exposed, covered with abbreviated scales; basal joint of equal length with the terminal, and slightly

bent, the second nearly as long again, more slender than the first, a little attenuated at the apex; terminal linear, very slender, slightly acuminate: *maxillæ* longer than the antennæ. *Antennæ* short, slender in the females, ciliated internally in the males: *head* small, with a crest between the antennæ: *eyes* rather prominent, naked: *thorax* stout, with an anterior and posterior crest: *abdomen* slightly depressed, with a carina in the male: *wings* incurved, faintly denticulate: *legs* short, rather stout. Larva naked, with the anal segment a little elevated: pupa folliculated, with a single spine at the apex.

With this genus Ochsenheimer and Treitschke unite *Phalæna Maura* of Linnæus, than which nothing can be more unnatural, their only resemblance consisting in the dinginess of their colours: I have therefore divided them, as no possible advantage can be gained by their union. *Nænia* may be readily known by the peculiar bifid appearance of the apex of the palpi, arising from the elongation of the scales—thereby remotely resembling those of *Triphæna*—combined with the highly crested thorax, dingy, reticulated, and subcrenated wings; exclusively of the structure of the palpi.

Sp. 1. typica. *Alis fuscis, anticis pallido reticulatis, stigmatibus albido marginatis.* (Exp. alar. 1 unc. 6—10 lin.)

Ph. No. typica. Linné.—Næ. typica. *Steph. Catal. part ii. p. 77. No. 6176.—Albin. pl. xv. f. 21.*

Head and thorax fuscous; the latter with some ash-coloured and black atoms on the crest: anterior wings fuscous, with the nervures pale hoary or whitish; an irregular striga of whitish and black patches at the base, a slightly waved interrupted whitish transverse striga, margined on each side with black before the anterior stigma, then a third striga, arising between two black spots on the costa, opposite the posterior stigma, suddenly bent outwards at its origin, terminating behind the middle of the inner margin, and bordered on each side with black lunules; beyond this, near the posterior margin, is a fourth narrow undulated one, suddenly angulated near the costa, and bounded on the inner edge with some irregular black spots; on the margin of the wing itself is a row of black trigonate spots; a quadrate spot between the stigmata, and an oval one behind the posterior black: stigmata cinereous with pale margins; with sometimes a third indistinct one, as in most of the *Agrotæ*: posterior wings plain fuscous, with paler cilia.

This species varies considerably; in some examples the strigæ are merely indicated by their dusky margins, while in others they are nearly white.

Caterpillar griseous, the sides dusky, with three pale streaks: it feeds on the Nettle, Houndstongue, Willow, &c.: the pupa is brown, enclosed in a web; and the imago is produced towards the end of June.

Common throughout the metropolitan district, frequenting banks where nettles abound. “Bottisham.”—*Rev. L. Jenyns*. “Epping.”—*Mr. H. Doubleday*. “Common in Salop.”—*Rev. F. W. Hope*.

GENUS CIII.—DYPTERYGIA *miki*.

Palpi conspicuous, ascending, slender, triarticulate; the two basal joints clothed with elongate scales, the apical joint considerably exposed, covered with short scales, linear, and as long as the basal one, which is slightly bent and more robust than the second; the latter is about one half as long again as the first, slightly attenuated towards the apex: *maxillæ* moderate. *Antennæ* very short, rather stout, simple in both sexes, ciliated within and pubescent in the male: *head* slightly crested; *eyes* small, naked: *thorax* robust, thick, crested on the back: *wings* incumbent; anterior short, broad, subtriangular, subdentate; posterior ample: *body* rather stout, crested on the back: *legs* short, posterior tibiæ robust, compressed, with a fascicle of hair on the outer edge. Larva naked, with a conical protuberance on the anal segment: pupa folliculated, with four apical spines.

Perhaps of all the groups of Noctuidæ, contained in the works of Oelsenhheimer, there is none which includes so heterogeneous an assemblage as his genus *Xylena* (*Xylina* Treit.), or which is constructed upon more artificial principles, the various members of which it is composed scarcely agreeing in any one particular, excepting in the resemblance of their colour to wood; in fact, their discrepancies of habit and structure are so great, that I doubt the propriety of the juxta-position of this and the three following genera, which form a portion of the group in question. Few entomologists are ignorant of the manner in which those common insects, *Phalænæ putris* and *polyodon*, Linné, repose; the former with *incumbent* wings, the superior *crossing each* other, and closely applied to its subdepressed body; the latter with *deflexed* wings *meeting over* its slightly elevated and crested back;—characters which have been stated, in a comment upon the genus *Gortyna*, to be of sufficient importance to divide the Noctuidæ into *sections*, but which are conveniently omitted, when they serve to disunite *genera* that have been previously united. As the abundance of several of the insects (especially of the two above-mentioned) belonging to this group, will enable any one to verify what I have above advanced—and as I conceive the cause of science and of truth will be best answered by separating, rather than by uniting, such discordant insects, and as I am, moreover, a strenuous advocate for the application of generic terms, in lieu of the almost useless (though occa-

sionally needful) substitution of sectional divisions*. I shall merely add, that *Dypterygia* may be at once distinguished from the three following genera, by its highly crested thorax, slender, nearly vertical palpi, with the terminal joint considerably exposed, and when denuded elongate-linear subacute; abbreviated subtriangular-ovate tristigmatiferous anterior wings, and other less obvious characters; exclusively of its dissimilarity in the larva and pupa states.

Sp. 1. *Pinastri*. *Alis anticis nigris, margine posteriori anguloque ani cinereo-fuscis*. (Exp. alar. 1 unc. 5—6 lin.)

Ph. No. *Pinastri*. *Linné*. *Don.* x. pl. 347. f. 2.—*Dy. Pinastri*. *Steph. Catal.* part ii. p. 77. No. 6175.

Head and thorax deep black, the crest on the latter tipped with deep ashy-brown; anterior wings also black, with the edges of the stigmata of a deeper hue, the costa with a few fuscous streaks, and with a few white dots near the tip, the inner margin ashy-brown, uniting to a large undulated spot of a similar hue, with darker longitudinal streaks at the anal angle, and resembling an expanded bird's wing, the apex pointing towards the hinder margin; this spot is bounded towards the base of the wing with black, and a longitudinal streak of that colour is placed in the centre of each arcole of the wing at the apex, between it and the costa, near the latter is a pale rusty-ash cloud; cilia with ashy streaks: posterior wings fuscous with cinereous cilia: abdomen pale fuscous. Caterpillar dirty-brown, sprinkled with deeper spots, with two paler longitudinal lines and some dusky oblique ones: it feeds on the *Rumex acetosa* and *R. acetosella*: the pupa is dirty brown, placed in a soft folliculus on the surface:—the imago is produced in June.

Not a common species: I have twice found the insect on palings near Coombe-wood, and possess a specimen captured at Brick-wood. “Near Norwich.”—*C. M. Curtis, Esq.* “Newington Green.”—*Mr. Bentley*.

GENUS CIV.—XYLINA.

Palpi short, nearly horizontal, rather slender, triarticulate, densely clothed with compressed scales; the terminal joint more or less exposed, elongate-ovate,

* That the genera in this work are not in all instances carried to the greatest extent, may be judged from the fact, that writers who have simultaneously passed over the same ground, have so far corroborated my views as to propose several of the genera which I have adopted, and to subdivide others; *ex gr.* Dr. Horsfield divides the *Polyommata* by the addition of the genus *Pithecopa* (to include *Po. Argiolus*, v. i. p. 85):—*Boisduval* has *Orthorinia* for *Ptilodontis*, *Asteroscopus* for *Petasia*, *Euchelia* for *Deiopeia*, &c.:—*De Jean* divides *Sphodrus* into *Sphodrus* and *Pristonychus*; and *Mr. Kirby* has recently divided the genus *Dyticus* into two, calling those species which have the elytra smooth in both sexes *Leionotus*.

subovate, the two other joints of nearly equal length, the basal rather stoutest: *maxillæ* as long as the antennæ. *Antennæ* simple, more or less ciliated in the males, rarely subserrated: *head* small, with a dense frontal crest: *eyes* naked, rarely pubescent: *thorax* quadrate, with a central anterior crest, the shoulders sometimes prominent: *legs* incumbent; anterior long, narrow, sublinear, obsoletely dentate on the hinder margin, posterior short: *body* rather short, with the back more or less elevated with a carina, which is sometimes crested; the apex with a small tuft in the male, rather acute in the female. Larva naked or slightly pilose: pupa folliculated, its apex unidentate.

Ochsenheimers's, or rather Treitschke's, concise definition of this genus is so truly general and indefinite, that it will clearly include a host of species that he has placed elsewhere; it is consequently difficult to say which is the typical species: I shall, therefore, (though perhaps improperly) employ the term *Xylina*, as long since printed in my Catalogue, to designate such species of the group in question as are distinguished by the characters above given, and which may be readily known by the following external marks: elongate, sublinear, obsoletely dentate anterior wings, quadrate slightly crested thorax; somewhat abbreviated body, slightly depressed in the females, with its apex subtriangular; exposed terminal joint to the palpi, and incumbent wings: in some respects this genus is remotely allied to *Cucullia*, but the metamorphosis is widely different, and the pupa is destitute of the singular appendage which forms so conspicuous a character in those of the *Cucullia*.

A. Eyes pubescent. (*Antennæ* of males subserrate.)

Sp. 1. *conspicillaris*. *Alis anticis cinereo fusco nigroque nebulosis, marginem internorem versus albicantibus, posticis albidis, fusco-venosis.* (Exp. alar. 1 unc. 6—7 lin.)

Ph. No. *conspicillaris*. *Linné*.—*Xy. conspicillaris*. *Steph. Catal. part ii. p. 78. No. 6182.*—Ph. No. *leuconota*. *Don. xiii. pl. 453. f. 3.*

Head hoary, thorax the same, or whitish-ash, transversely striated anteriorly, with a dusky longitudinal dorsal vitta: anterior wings obsoletely striated, deep fuscous black, with the inner margin generally more or less broadly whitish, united to an interrupted oblique striga, reaching nearly to the apex of the costa; stigmata obscure, a third, or teliform one, sometimes present, their margins alone conspicuous; posterior wings whitish or white, with a narrow dusky marginal border; the nervures also dusky; cilia white.

Var. *β*. *Steph. Catal. No. 6183.*—Head and thorax pale hoary-ash, the latter immaculate: anterior wings as in the last, with a large ovate pale ashy-white patch on the costa, reaching from the anterior stigma to the hinder margin. This rare insect varies considerably; in some examples the anterior wings are nearly of an uniform cinereous, striated with a deeper hue, as in *Xy. pulla*: in others the colours are very dark.

Caterpillar dirty green, with a yellowish-white lateral line edged with brownish: it feeds on the *Astragalus Onobrychis*, &c.:—the imago is formed towards the end of May.

A rare species; two or three specimens have been taken between Birch-wood and Bexley; and I possess a pair captured in Bulstrode Park by the late Duchess of Portland.

B. Eyes naked. (Antennæ simple in both sexes.)

Sp. 2. *rhizolitha*? *Alis anticis canis, nebulosis, lineolâ baseos superné bifidâ serieque punctorum nigrorum ad marginem posticum.* (Exp. alar. 1 unc. 6—8 lin.)

No. *rhizolitha*. *Hübner*?—*Xy. Lambda*? *Steph. Catal. part ii. p. 78. No. 6177.*

Head and thorax hoary, the latter with a black arch, edged posteriorly with white, in front: anterior wings also hoary, with darker clouds, a black abbreviated lineola at the base, terminating in two or three twigs, another slightly curved forming an edge to the posterior stigma, between which and the inner margin of the wing is a third united to a black hook in the place of the teliform stigma of the *Agrotis*: on the hinder margin is a row of minute black dots; the ordinary strigæ are more or less apparent, but suddenly bent near the costa, and the stigmata distinct but obsolete: the posterior wings are deep fuscous with the cilia paler.

In some specimens the markings are nearly obliterated, and the wings scarcely clouded.

Caterpillar downy, green, spotted with white, with a bluish dorsal line: it feeds on the oak:—the imago appears in the autumn.

Not very common: I have once or twice found the insect at Hertford and at Coombe-wood, and in other parts of the metropolitan district. “Netley, Salop.”—*Rev. F. W. Hope*. “Epping.” *Mr. H. Doubleday*.

† Sp. 3. *pulla*. *Alis anticis nigro-cinereis, maculâ medio obsoletâ albidis; posticis fusco-venosis.* (Exp. alar. 1 unc. 8 lin.)

No. *pulla*. *Wien. V.?*—*Xy. pulla*. *Steph. Catal. part ii. p. 78. No. 6178.*

Somewhat resembling the last, but rather of a different colour: head and thorax dusky-ash; anterior wings of a deep ash-gray, with a dusky spot at the border and several deeper ash-coloured strigæ, with an obsolete whitish central spot, and a pale striga near the hinder margin; the cilia with fuscous stripes: posterior wings whitish with the nervures dusky or fuscous.

Caterpillar green, with whitish spots and lateral line:—the imago appears in the autumn.

A specimen of this insect is in the collection at the British Museum: it was captured at Woodside near Epping in 1817.

Sp. 4. *semibrunnea*. PLATE 21. f. 3.—*Alis anticis angustioribus subnebulosis, extis cinereo-brunneis, intus brunneo-fuscis.* (Exp. alar. 1 unc. 7 lin.)



No. semibrunnea. Haworth.—Xy. semibrunnea. Steph. Catal. part ii. p. 87. No. 6179.

Head and thorax reddish or ashy-brown, with the sides of the latter and apex of the crest of a deeper hue or nearly black; anterior wings with the costal half deep ashy-brown or reddish-ash, the inner half of the same hue more or less clouded with fuscous-brown, the clouds disposed longitudinally, with an oblique bent pale streak or hook dividing the broadest cloud towards the apex of the wing, somewhat as in *Cucullia Scrophulariæ* and *Verbasci*: towards the base are some pale angulated streaks and a deeply angled one near the hinder margin; the stigmata are rather indistinct, and behind the posterior one is an obscure arcuated striga composed of very minute black dots: the cilia are clouded with pale and deeper brown: the posterior wings pale ashy-brown, with the margin darker, the nervures and a small central spot rather dusky: abdomen, with its dorsal tufts, tipped with dark fuscous-brown.

A rare insect near London; I possess a specimen that was captured at Coombe-wood, and obtained a pair from the Marshamian cabinet.

Sp. 5. petrificata. PLATE 23. f. 1.—*Alis anticis latioribus griseo fuscoque striatis, lineolâ baseos alterâque versus marginem interiorem atro-brunneis, stigmatibus pallidioribus.* (Exp. alar. 1 unc. 8—8½ lin.)

No. petrificata. Wien. V.—Xy. petrificata. Steph. Catal. part ii. p. 78. No. 6180.

Pale ochraceous or griseous-brown; anterior wings the same, with darker clouds; a longitudinal streak at the base, and another on the disc towards the middle of the inner margin, of a deeper brown; the stigmata pale ochraceous; behind the posterior one is an arcuated striga composed of a double series of minute fuscous dots; behind which is a pale deeply angulated striga, with a few elongate-triangular ochraceous-brown streaks on its inner edge: the margin is dotted with fuscous; cilia ochraceous, with darker clouds; posterior wings ochraceous-brown, with the base paler; an obsolete transverse striga of fuscous spots a little behind the middle, and a darker lunule on the disc towards the base: cilia and abdomen ochraceous.

This species resembles the preceding, as *Cucullia Scrophulariæ* does *C. Verbasci*: it is variable; some examples being of a darker hue than the one I possess.

A comparison of the accompanying figures of this and the preceding insect, executed from fine and perfect specimens in my collection, will sufficiently point out their obvious dissimilarity: there is a beautiful pair of each species in the British Museum; and Mr. Haworth and Mr. Marshall each possess specimens of both insects: it is therefore astonishing that the species should hitherto have remained confounded, when such opportunities were afforded for their elucidation.

Caterpillar bright green, with white spots and a broad white dorsal stripe, and a narrow white streak on each side; head glossy: it feeds on various trees, such as the elm, oak, lime, sloc, &c.: and the imago appears in June.

The pair of this insect in the British Museum were taken near London, I believe, by Mr. Neale: those in Mr. Haworth's cabinet he obtained from Mr. Francillon's collection; and mine was kindly given to me by Captain Blomer, who captured the insect near Teignmouth, Devon. "Near Sidmouth, Devon."—*T. Marshall, Esq.*

Sp. 6. putris. *Alis anticis flavo-albidis, margine anteriori stigmatibusque fuscis, strigâque geminatâ punctorum nigrorum.* (Exp. alar. 1 unc. 3—5 lin.)

Ph. No. putris. *Linné.*—*Xy. putris.* *Steph. Catal. part ii. p. 78. No. 6183. Albin. pl. lxxix. f. a—d.*

Head yellowish, with two dusky longitudinal streaks: thorax anteriorly yellowish, posteriorly fuscous; anterior wings pale-yellowish or ochraceous, with the costa fuscous; the stigmata rather obsolete, the anterior orbicular, fuscous, frequently with a pale margin; the posterior also fuscous, with a pale margin and a flexuous whitish streak in the middle; from this to the hinder margin extends a double oblique fuscous striga; and at the anal angle is a fuscous spot; between the posterior stigma and the hinder margin is a geminated striga of black spots, placed parallel with the latter; the hinder margin itself, and the tips of the cilia, are also spotted with black: the posterior wings are pale-ochraceous or fuscous, with the hinder margin spotted with brown: cilia pale: abdomen yellowish.

Caterpillar yellowish-brown, spotted with black, and striated with pale yellow and whitish, with a yellowish dorsal line: the head brown-black: it feeds on grasses: the imago appears about the middle of June.

Not uncommon in many places throughout the metropolitan district, frequenting hedges, weedy banks, and gardens; also the vicinity of woods and grassy places. "Epping."—*Mr. H. Doubleday.*

GENUS CV.—*CALOCAMPA** *mihi*.

Pulpi short, oblique, robust; triarticulate, densely squamous, the terminal joint concealed, basal much shorter than the second and more robust, terminal ovate truncate: *maxillæ* the length of the antennæ. *Antennæ* rather short, stout in the males, and ciliated beneath: *head* small, with a dense frontal crest: *eyes* naked, small: *thorax* quadrate, with a small anterior crest: *wings* convoluted or incumbent; anterior elongate, sublinear, denticulated on the hinder margin: *body* short, depressed, the apex with a small tuft in the male. Larva smooth: pupa folliculated, with two elongate spines at the apex.

* *Καλός pulcher, καμπή cruca.*

Generic terms, it has been justly observed, may be considered as mere aids to the memory, by being applied to dissimilarly constructed objects. Until therefore it can be shown that *long* and *short*, *narrow* and *broad*, *concealed* and *exposed*, *robust* and *gracile*, &c. are synonymous terms, so long must I consider this genus distinct, either from *Dypterygia* or *Xylophasia*. *Calocampa* has the anterior wings long, narrow, and nearly linear; the terminal joint of the palpi (which are robust) completely concealed, short, the abdomen abbreviated, thorax scarcely crested, &c. *Dypterygia*, on the contrary, has the anterior wings short, broad and subtriangular-ovate; the terminal joint of the palpi (which are slender) considerably exposed, elongate, the abdomen rather elongated, the thorax strongly crested, &c.; while *Xylophasia* and *Xylina* have the terminal joint of the palpi more or less exposed, and other distinguishing characters, as noticed under each genus respectively: stronger proofs therefore cannot be advanced to show the absurdity and inutility of a genus composed without the slightest comment of the above-mentioned genera, and of the folly of drawing up what are termed *generic* characters from one species only, as in such cases, the more rigidly such characters are drawn up, the less generic but more *specific* they become; and, consequently, instead of instructing, they only serve to mislead the student.

Sp. 1. *exoleta*. *Alis anticis parte anteriori fusco, interiori cinereo nebulosis, maculis duabus oblongis.* (Exp. alar. 2 unc. — 2 unc. 3 lin.)

Ph. No. *exoleta*. *Linnæ.*—*Xy. exoleta*. *Curtis*, vi. pl. 256.—*Ca. exoleta*. *Steph. Catal. part ii. p. 79. No. 6184.*

Head griseous; thorax brown in front, with its back dusky, the apex paler, with a few scattered black atoms; anterior wings pale-reddish ochre or cinerascens, with the base faintly striated with dusky, the costa rather fuscous toward the base, the inner margin clouded with the same colour within, the posterior margin fuscous, clouded with cinereous; the cilia brown, with black spots; stigmata large, the anterior ear-shaped, the posterior larger, with a black dot at its base, and two oblong spots on its hinder margin, the lower one extending towards an elongate black streak, with a faint one adjoining near the posterior margin of the wing: posterior wing grayish-brown, with the margin and a discal lunule darker; cilia ochraceous: abdomen griseous, the back fuscous towards the apex.

Caterpillar green, darkest on the back, with large white spots on the back, and smaller ones on the sides, the latter with a yellow line above the smaller spots, and a red one beneath: it is polyphagous, feeding upon lettuce, spinach, broom, bramble, asparagus, &c.:—the imago appears in the autumn, but some pupæ remain till the following April or May before they change.

Not common: it occurs in gardens and in woody places: I have taken it at Darenth-wood, and possess a specimen captured near Plymouth: it has been found near Oxford; and in several places near London.

Sp. 2. *vetusta*. *Alis anticis parte anteriori pallidè, interiori obscurè fuscis, maculâ oblongâ unicâ.* (Exp. alar. 1 unc. 10 lin.—2 unc. 2 lin.)

No. *vetusta*. *Hübner*.—Ca. *vetusta*. *Steph. Catal. part ii. p. 79. No. 6185.*—

Ph. No. *exoleta*. *Don. vi. pl. 187?* imago.

Closely allied to the preceding, but totally different in the larva state: it differs chiefly in having the anterior wings of a bright reddish ochre on the costa, and of an obscure fuscous within, with the anterior stigma nearly obsolete, the posterior distinct, with a single black spot adjoining, and the longitudinal streak of the former species nearly absorbed in the fuscous ground of the inner margin: the thorax and posterior wings are of a deeper hue, and the abdomen is less clouded towards the apex.

Caterpillar dirty green, spotted with whitish, with a yellowish dorsal and whitish lateral line, the stigmata red: it feeds on *Carex*: the imago, like the last, appears in the autumn.

Donovan appears to have figured this species by mistake for Ca. *exoleta*. He consequently is the first English writer who furnishes us with a knowledge of the insect in question, notwithstanding he erroneously considered it as the Ph. No. *exoleta* of Linné.

A rare species: the only locality that I am aware of is Darenth-wood, where the insect has been taken several times.

GENUS CVI.—XYLOPHASIA* *mīhi*.

Palpi rather elongate, slightly ascending; triarticulate; the two basal joints densely clothed with elongate scales, the terminal considerably exposed; the basal joint rather shorter and more robust than the second, the terminal elongate-ovate, somewhat acute: *maxillæ* as long as the antennæ. *Antennæ* simple, more or less ciliated, or pilose, in the males; *thorax* quadrate, with a small crest in front: *wings* deflexed, anterior rather elongate, subtriangular, the base being narrowed; hinder margin more or less denticulated: *body* elongated, stout, not depressed, the back carinated, each segment with a dorsal crest; apex, in the male, with a large tuft, in the female, narrowed, sublinear, with a small tuft. Larva naked: pupa subterranean, with a spine at the apex.

Xylophasia may be distinguished with facility from *Calocampa* by the exposed terminal joint of its palpi, elongated and distinctly carinated body, which has the apex with a large tuft in the male,

* Ξύλον lignum, φασίς apparitio.

and elongate-linear with a small tuft in the female; broad, somewhat triangular anterior wings (which are deflexed during repose), the slenderness of the antennæ, and in other less evident characters; and from *Xylina*, by the broad subtriangular wings, elongate robust body, and longer, ascending palpi, &c.

Sp. 1. lithoxylea. *Alis anticis flavo-ochraceis, maculâ costali margineque postico irregularitèr ferrugineo-fuscis; posticis pallidis lunulâ mediâ fimbriâque fuliginosis.* (Exp. alar. 1 unc. 9—11 lin.)

No. lithoxylea. *Fabricius.*—*Xy. lithoxylea. Steph. Catal. part ii. p. 79. No. 6186.*

Ochraceous: eyes black: head and thorax with a few pale rusty-brown markings; anterior wings pale yellow ochreous, with irregular darker fuscous or ustulated streaks and clouds, several of the former placed obliquely on the costa, one towards the centre, somewhat broader; at the base is a conspicuous darker streak, and near the base, on the inner margin, is a second, and a little behind the middle, on the disc, towards the anal angle, is a third flexuous one, with an ustulated cloud adjoining on its costal edge: behind this is an obscure arcuated striga of extremely minute fuscous dots; and on the hinder margin two rusty-brown spots, forming an irregular border to the wing: posterior wings pale, with the margin and a costal lunule dusky, the nervures, and a row of marginal dots, fuscous.

The tint of colour, and intensity of the markings, vary considerably; but the insect is invariably of a paler hue than the following; and amongst other characters wants the transverse striga on the posterior wings.

Caterpillar green, with whitish spots and lateral lines: it feeds on the black thorn: the imago appears towards the beginning of July.

Frequents palings and hedges; not uncommon in Epping Forest, and in Copenhagen-fields; at Darenth, Coombe, &c. “Epping.”—*Mr. H. Doubleday.* “Alderley, Cheshire.”—*Rev. E. Stanley.*

Sp. 2. sublustris. *Alis anticis cinereo-ferrugineis maculâ costali margineque postico irregularitèr saturatè ferrugineo-fuscis; posticis fusciscentibus lunulâ mediâ strigâque pone medium saturationibus.* (Exp. alar. 1 unc. 8—10 lin.)

No. sublustris. *Esper.*—*Xy. sublustris. Steph. Catal. part ii. p. 79. No. 6187.*

Considerably resembling the last, but of a deep rusty-ash; the anterior wings are not striated, nor do they possess the lineola near the base on the inner margin, but in the middle of the costa is a deep rusty-brown cloud, extending transversely nearly to the inner margin of the wing, where it is absorbed in a deeper cloud, which terminates in a flexuous darker streak; on the costa are also some obscure lineolæ of similar hue; and behind the posterior stigma is an arcuated striga composed of pale fuscous lunules, the points of which are outwards, and darker; between this and the hinder margin is a very obscure pale striga, having a more distinct angulated portion, resembling the letter W, near the angle, on the costal edge of which, in the middle of the posterior margin, is a triangular deep rusty-brown spot, and on the anal angle

a second, somewhat ovate, spot of similar hue: cilia ferruginous, with brownish clouds at the tip: posterior wings fuscous, with a central lunule, and a curved transverse striga, darker.

This insect has been likened to the *No. musicalis* of Esper; but that insect is of a pale bluish-ash, with a deep rectangular central transverse fuscous fascia, followed by two rows of very distinct black spots, the hinder margin with a deep fuscous cloud, dividing into five distinct lobes on its inner edge, the apex of the wing of an immaculate hoary-ash, and the base has two rows of black spots placed longitudinally. Esper, in his text, refers this to the *No. lithoxylea* of Fabricius; while that insect and *sublustris* (which are both admirably figured by him) are referred to the *No. petrificata* of that author.

All the specimens I have seen of this insect were taken near Brighton by Mr. Brown.

Sp. 3. *polyodon*. *Alis anticis fusco nebulosis, strigâ posticâ valdè dentatâ albâ; posticis cinereo-fuscis, fimbriâ saturatori, strigâque pallidâ versus angulum ani.* (Exp. alar. 1 unc. 10 lin.—2 unc. 2 lin.)

Ph. *No. polyodon*. Linné—Xy. *polyodon*. Steph. Catal. part ii. p. 79. No. 6188.

A most variable species: ashy-brown, thorax with transverse and longitudinal streaks: anterior wings fuscous- or ochraceous-brown, with various black and pale clouds and strigæ; especially three strigæ of the former colour, one at the base, another near the base on the inner margin, and the third between the stigmata and the inner margin; the stigmata are pale, sometimes clouded, the anterior is oblong and placed obliquely; the ordinary strigæ are apparent, and the fourth, near the hinder margin, forms a very prominent feature, being of a very pale cast, sometimes nearly white, very much waved, and acutely angulated, forming, towards the anal angle, a W, which is crowned with three conical black streaks: the posterior wings are ashy-brown, with a dark marginal border, and a pale striga towards the anal angle.

Some specimens are very much clouded with white; others are nearly plain fuscous, with the usual markings, and I possess one of a deep dusky-brown: in fact, scarcely two specimens agree precisely.

Caterpillar dirty-white, thickly spotted with black, with a black head: it feeds at the roots of grass, and very much resembles the larva of an *Agrotis*, excepting its bulk. The imago appears in June and July.

One of our most abundant insects, occurring copiously even in the metropolis itself, frequenting gardens, hedges, and wood sides. "Alderley, Cheshire."—Rev. E. Stanley.

Sp. 4. *rurea*. *Alis anticis griseo fuscoque variis, maculâ costali, lineolâ basi versus marginem anteriorem fimbriâque irregulari griseo-fuscis.* (Exp. alar. 1 unc. 6—8½ lin.)

No. *rurea*. Fabricius.—Xy. *rurea*. Steph. Catal. part ii. p. 79. No. 6189.

Head fulvous: thorax ashy-brown or griseous, with its centre palest: anterior wings pale griseous or ochraceous-red, with various spots and clouds; with

a fuscous lineola at the base of the inner margin, an irregular large subovate spot in the middle of the costa, sometimes nearly obliterated, in which the stigmata are placed; these are rather paler than the wing; the anterior is oblong, subtriangular, the posterior reniform; behind the latter is a geminated bent striga of obscure minute fuscous dots; and in the margin itself is an irregular interrupted fascia, branching inward at the anal angle, and bearing some minute wedge-formed dusky spots at the base of the cilia; at the apex of the costa are a few white spots: the posterior wings are fuscous, with a darker fimbria.

Var. β . Anterior wings of a bright rufous-ochre, with the costa dusky, and two spots of a similar hue on the hinder margin; the stigmata distinct, the anterior nearly uniting to the posterior: behind the latter a pale bent striga.

Caterpillar said to feed on various grasses, the primrose, &c. The imago appears in June, or the beginning of July.

Not very uncommon; taken in various places throughout the metropolitan district. I have frequently captured it at Darent and Hertford. "Netley, Salop."—*Rev. F. W. Hope*. "Epping."—*Mr. H. Doubleday*.

† Sp. 5. *hirticornis*. "*Alis glaucescentibus, fasciâ abbreviatâ terminalique pliatâ: antennis hirtio-pectinatis*."—*Haw.*

No. *hirticornis*. *Haworth*.—*Xy. hirticornis*. *Steph. Catal. pt. ii. p. 79. No. 6190*.

Wings somewhat glaucous, with an abbreviated fascia, and an interrupted terminal fimbria: antennæ deeply ciliated.

The specimens whence the above description was made closely resembled the foregoing species; their chief distinction consisting in the strongly ciliated or somewhat pectinated antennæ: they were formerly in Mr. Hatchett's collection, but were unfortunately destroyed. Whether they were allied to the *Xylena borealis*, Curtis, or what that species is, I am unable to say, unless it be Var. β . of the foregoing insect.

Taken at Darent-wood about twenty years back.

Sp. 6. *combusta*. *Alis anticis fusco-brunneis obsoletè nebulosis, stigmatibus oblongis marginibus pallidioribus*. (Exp. alar. 1 unc. 8—9 lin.)

No. *combusta*. *Hübner*.—*Xy. combusta*. *Steph. Catal. part ii. p. 80. No. 6192*.

Head and thorax rusty-brown, the former and crest of the latter sprinkled with cinereous; anterior wings deep fuscous-brown, with some obsolete lighter and darker lineolæ on the costa, and the nervures more or less dusted with pale ochraceous-brown; the stigmata oblong, the anterior oblique, somewhat acute, the margins rather pale; posterior auriform, with an interrupted pale margin, somewhat resembling a figure 3 or 5; on the hinder margin of the wing is an interrupted streak of dusky lunules; the cilia brown, with ochraceous clouds: posterior wings fuscous, with the base rather pale, the margin very dark; cilia dusky-brown, with an ochraceous tinge.

An insect of considerable rarity, few examples only having occurred in Britain: I possess specimens captured at Coombe-wood, and one found at Birch-wood; the species has also been taken in the neighbouring district, three or four instances of its capture at Darent-wood having come to my knowledge: it is found in June.

Sp. 7. epomidion. *Alis griseo fuscoque variis, strigâ posticâ undulatâ pallidâ, stigma antica margine nigro.* (Exp. alar. 1 unc. 4—6 lin.)

No. epomidion. *Haworth.*—Xy. epomidion. *Steph. Catal. part ii. p. 79. No. 6191.*

A beautiful insect: head and thorax deep purplish-brown, the latter with some dark or black longitudinal streaks and dots: anterior wings varied with griseous and fuscous, with bright purplish clouds; a deep black lineola at the base, and a second near the base on the inner margin as in Xy. nivea; anterior to the stigmata is a more or less obscure undulated striga, and behind an arcuated one, composed of pale indistinct lunules, the apex of each black towards the outer margin; on the hinder margin is a clear pale striga, composed of two distinct arches in the middle, and two or three waves at the anal angle; this striga is accompanied by some dusky or fuscous clouds; the hinder margin of the wing spotted with fuscous; the anterior stigma is oblong, and has a deep black margin; the posterior pale, rather obsolete, with its inner edge black, the outer vanishing: posterior wings fuscous, with the base paler, the margin darker, with a pale waved mark near the anal angle, cilia flavescent, with a brown line: abdomen cinereous, the sides and anal tuft purplish.

This beautiful and rather uncommon species does not appear to be very rare in the shady lanes near Ripley, where I have frequently captured it. At the end of June, 1827, I caught in one evening three remarkably beautiful specimens. It occurs in other places near London, having been found at Coombe-wood and in Richmond Park: it likewise inhabits Derbyshire, Yorkshire, and Devonshire, from which counties I have received specimens. “Bath.”—*Mr. Chant.* “Netley.”—*Rev. F. W. Hope.*

Sp. 8. scolopacina. *Alis anticis griseo fuscoque variis, fasciâ posticâ ferrugineâ, strigâque nigrâ pone medium dentatâ, stigmatè postico albo, corpore subgracili.* (Exp. alar. 1 unc. 3—4 lin.)

No. scolopacina. *Esper.*—Xy. scolopacina. *Steph. Catal. pt. ii. p. 80. No. 6193.*

Somewhat resembling the preceding, but smaller, and with the body more slender: the head and thorax are of a pale ochreous, or yellowish brown, with blackish clouds; anterior wings the same, with darker shades; a dusky streak at the base on the inner margin; an abbreviated brownish, or sub-ferruginous fascia, on the middle of the costa, behind the posterior stigma, which is white, with a griseous lunule; a slender arcuated, and very distinct, regularly dentate black striga, followed by a clear ochraceous space, behind

which the posterior margin is rusty-brown, with an undulated pale striga; in the margin are a few triangular darker spots; the cilia are blackish-brown, with paler spots: the posterior wings are dusky, with pale cilia.

This is also a rare insect, at least near London; two examples only having been taken in the metropolitan district: these were found by Mr. King at Coombe-wood, in June, about fifteen years since. The insect, however, appears to occur, though sparingly, near Sheffield, and in other parts of Yorkshire. I am indebted to Mr. Chant for a fine specimen taken by him near the place above mentioned.

† Sp. 9. rectilinea. *Alis anticis griseo-cinereis fasciâ latâ centrali margineque postico fusco-brunneo.* (Exp. alar. 1 unc. 6 lin.)

No. rectilinea. *Hübner?*—*Xy. rectilinea.* *Steph. Catal. pt. ii. p. 80. No. 6194.*

Head and thorax grayish-ash, with the sides and anterior margin of the latter brownish: anterior wings pale griseous-ash, with a broad central transverse dusky-brown fascia in the middle, being narrowed towards the inner margin, and bordered on each side with a darker undulated striga; at the base, on the inner margin, is a geminated streak of similar hue, with a paler edge, and towards the hinder margin some marmorated spots of similar hue, with a pale waved striga at the anal angle: cilia cinereous, with darker spots: posterior wings fuscous, with the margin dusky, and the cilia pale.

Hübner's figure of this beautiful insect appears to differ a little from the one I have referred to in my Catalogue, from the *Papillons d'Europe*, and which corresponds most admirably with the only example I have hitherto seen, which is in the possession of my friend, T. Marshall, Esq., who informed me he had seen other specimens in the collections in the north:—it must not be confounded with the No. rectilinea of Haworth, which belongs to the following genus.

Hitherto found only in the north of England. “Trafford Park, Lancashire.”—*T. Marshall, Esq.*

GENUS CVII.—HADENA, *Schrank.*

Palpi short, rather slender, slightly ascending, clothed with hair and scales, tri-articulate; terminal joint rather exposed, short, subovate; the basal joint curved, in general rather shorter and stouter than the second, which is a little attenuated towards the apex; terminal subovate, obliquely truncate: *maxillæ* about the length of the antennæ. *Antennæ* short, rather stout, in general simple, with the under side ciliated in the males, or obscurely subserrate, with a distinct fasciculus of hair on each joint within: *head* small, with a dense frontal crest; *eyes* large; globose, sometimes pubescent: *thorax* slightly crested: *body* stout, rather elongate, very acute in some females: *wings* slightly deflexed during repose; anterior obscurely denticulate on the hinder margin: in general

of gay colours, sometimes with pale reticulations, and mostly with a pale undulated striga, in which is usually a conspicuous angulation, resembling the letter W, near the posterior margin; stigmata distinct; posterior wings with an obscure emargination towards the costa: larva naked, generally of lively colour: pupa subterranean.

The contents of this genus are of a more diversified nature than could be wished, and the time cannot be far distant before several of the species, especially amongst those which are included in the second section, as divided in my Catalogue, are detached and otherwise distributed; but I confess that at present I know no better place for their reception: the species of the first section are eminently distinguished by the beautiful rich satiny tints of colour which adorn their wings while recent, thence called "*Brocade moths*," and all, by possessing a conspicuous pale striga on the posterior margin of the anterior wings, which is biangulated towards the anal angle, and resembles the letter W; a character which also obtains, though in a less conspicuous degree, amongst several of the species in the neighbouring genera.

Sp. 1. *amica*? PLATE 23. f. 2.—*Alis anticis fusco-cinereoque variis, fuscâ magnâ angulatâ ferrugineâ obscuriore, in quâ stigmatâ ordinariâ posticum magnum uiriforme albicante.* (Exp. alar. 1 unc. 11 lin.)

Ha. *amica*. *Treitscke*?—*Steph. Catal. part ii. p. 80. No. 6195.*

Head and thorax fuscous, with a ferruginous patch on the latter: anterior wings varied with cinereous and fuscous; with a broad obscure ferruginous central fascia, somewhat as in the last-described insect, having the ordinary stigmata, and followed posteriorly by a broad hoary ash-coloured striga, with some purplish clouds towards its hinder edge, beyond which is the ordinary undulated pale striga, and the hinder margin, except near the costa, is of a deep chocolate with a violaceous tinge; the anterior stigma is pale and rather indistinct; the posterior large, yellowish-white, with ashy clouds, and two distinct white spots on the hinder margin: the posterior wings are pale fuscous, with a darker central spot and margin.

Whether this large and beautiful species be truly the Ha. *amica* of Treitscke, his short specific character will not allow me to determine, as I am totally unable to decipher his German description, but I have little doubt that such is the case: it is decidedly not the No. *satura* of Hübner, of which the description appears in a subsequent page.

Many years have elapsed since examples of this very handsome species have occurred in England. A fine pair was in the collection of Mr. Francillon, and another in those of Mr. Marsham, and I believe now in that of Mr. Swainson; and a single specimen is in Mr. Vigors' cabinet: of their exact localities I am ignorant.

Sp. 2. *adusta*. *Alis anticis brunneo cinereoque variis, strigis stigmatibusque flavidis: posticis albidis venis margineque externo fuscis.* (Exp. alar. 1 unc. 8—10 lin.)

No. *adusta*. *Esper?*—Ha. *adusta*. *Steph. Catal. part ii. p. 80. No. 6196.*

Head and thorax deep fuscous, with darker shades and spots: anterior wings varied with cinereous and brown, with a pale flavescent undulated striga before, and another behind the middle, united by an indistinct dusky lineola, placed between the stigmata and the inner margin of the wing: the ordinary stigmata are cinereous, the anterior with a black margin: on the posterior margin of the wing is a greatly undulated flavescent striga, and on the margin itself are some deep fuscous sublunate spots: posterior wings whitish, with the nervures and outer margin dusky.

Also a rare species: my specimens were taken at Birch-wood: examples have occurred in other parts of Kent, and at Coombe-wood, but much more rarely at the latter place.

Sp. 3. *satura*. *Alis anticis rufo-fuliginosis, lineolâ nigrâ maculis stigmatibus fuscisâque pallidioribus nigro adnatis, posticis fuscescentibus.* (Exp. alar. 1 unc. 8—10 lin.)

No. *Satura*. *Wien. Verz.*—Ha. *satura*. *Steph. Catal. pt. ii. p. 80. No. 6197.*

Closely resembling the preceding species, of which it is possible it may prove to be a variety: the wings are, however, more deeply marked with black, and a very conspicuous straight black lineola unites the third and fourth ordinary strigæ on the anterior wings; at the base of which is a black streak, and a dusky one near the base of the inner margin; the stigmata are pale brownish-ash, with slender black edges, the posterior one somewhat tinted with yellow; on the hinder margin of the wing is a pale striga, composed of numerous acute denticulations, of which two are more conspicuous, and form the usual W mark of the group; the cilia are brownish, interrupted with pale cinereous, and preceded by a series of conical black spots: posterior wings dusky, with the margin, nervures, and a central lunule, of a darker hue.

I possess a pair of this species, which I obtained from the cabinet of the late Mr. Marsham: they somewhat resemble the preceding species, but are of a smaller size, and their colours and markings are sufficiently distinct to prevent their union. I am not aware of their locality, but most probably they were found near London: where the insect has been taken, I believe at Coombe-wood, towards the end of May.

Sp. 4. *remissa*. *Alis anticis pallidè fuscescentibus nebulosis, lineolis duabus basi, arcuque medio crassissimo nigricantibus.* (Exp. alar. 1 unc. 6—8 lin.)

No. *remissa*. *Hüb.*—Ha. *remissa*. *Steph. Catal. pt. ii. p. 80. No. 6198.*

Similar to the following, but considerably paler in colour, especially on the costa

of the anterior wings, with the posterior stigma on the latter much less dentated, and somewhat obliterated; the third ordinary striga is barely visible, and is united by a stout black streak to the second, towards the inner margin of the wing, the space anterior to which, on the costa, is fuscous, and bears the ordinary stigmata, white or pale cinereous or ochraceous, the anterior delicately margined with black, the posterior with a black edge on its anterior margin, and vanishing into the ground colour of the wing on its posterior: towards the hinder margin of the wing are two acute dusky or brownish streaks, as in *Calocampa exoleta*, and the hinder margin of the wing is fuscous, with black lunules: cilia fuscous, with pale streaks: posterior wings fuscouscent.

This species varies considerably in the intensity and brilliancy of its colours and markings, but the less denticulated posterior striga serves to distinguish the varieties from those of the following insect.

Ha. remissa is also a somewhat rare species, though in some places and seasons a considerable number of specimens have occurred: I have taken it occasionally at Coombe and Darenth-woods in June, and near Ripley and Hertford. “Cottingham, Yorkshire.”—*A. H. Haworth, Esq.* “Bottisham.”—*Rev. L. Jenyns.* “Netley, Salop.”—*Rev. F. W. Hope.*

Sp. 5. *oblonga.* *Alis anticis cinereis nebulosis, costâ maculâque oblongâ fuscis, strigâ albidâ posticâ undulatissimâ.* (Exp. alar. 1 unc. 6—8 lin.)

No. *oblonga.* *Haworth.*—*Ha. oblonga.* *Steph. Catal. part ii. p. 80. No. 6199.*

Head and thorax fuscous: anterior wings clouded with fuscous, with the costa of a deeper hue, and having three distinct whitish spots near the apex, which, with the usual stigmata, is of a cinereous hue: the rest of the wings is of a similar tint, with a large wedge-shaped fuscous spot behind, and another oblong darker one in the middle, towards the inner margin; towards the posterior margin is a whitish striga, which is very much waved, and strongly dentate: the posterior wings are whitish, with the nervures and outer margins dusky.

The resemblance between this and the foregoing insect is almost too close to warrant their separation; but as both species vary greatly, and each variety retains its own peculiar, though obscure, characteristics, I have, with Mr. Haworth, considered them distinct, as I conceive that it is not the quantum but the constancy of difference that constitutes a species, as I have elsewhere endeavoured to show. This insect has been taken at Coombe and Darenth woods, and in Epping Forest: also in Yorkshire.

Sp. 6. *Thalassina.* *Alis anticis fusco cinereoque variis, stigmatibus ordinariis fuscâque repandâ dilutioribus, posticis cinereis.* (Exp. alar. 1 unc. 6—7 lin.)

No. *Thalassina.* *Bork.*—*Ha. Thalassina.* *Steph. Catal. pt. ii. p. 80. No. 6200.*

Somewhat resembling *Ha. satura*, but less, of a more beautiful tint, and with paler and more distinct strigæ, &c.: the head and thorax nearly as in that insect, but of a rich chocolate-brown hue, with some ashy points, and a deep blackish streak on each side at the base of the anterior wings, which latter are of a rich chocolate-brown with a rich purplish-brown tinge, with a pale patch at the base, bounded towards the inner edge by a deep black lineola, the usual anterior striga obsolete, the second and third distinct, pale, and edged with brown, the fourth, on the hinder margin, rather suddenly curved at its origin near the costa, thence to the anal angle nearly straight, except a very distinct biangulated portion, forming the letter W, which is crowned by three acuminate black streaks: the stigmata are edged with black, and a striga of similar hue connects the second and third ordinary strigæ, as in other species of this genus: posterior wings cinereous, palest at the base.

A handsome and by no means rare insect; found throughout the metropolitan district; in Devonshire, Yorkshire, Suffolk, Norfolk, &c.; and I believe pretty generally distributed. “Epping.”—*Mr. H. Doubleday*. “Alderley, Cheshire.”—*Rev. E. Stanley*. “Netley, Salop.”—*Rev. F. W. Hope*. “Bottisham.”—*Rev. L. Jenyns*.

Sp. 7. Genistæ. *Alis anticis subdenticulatis argenteo-albis nebulosis, lineolâ basi, liturâ medio, maculisque duabus versùs strigam posticam nigris.* (Exp. alar. 1 unc. 7—8 lin.)

No. Genistæ. *Bork.*—Ph. dives. *Don. x. pl. 352. f. 2.*—*Ha. Genistæ. Steph. Catal. part ii. p. 81. No. 6201.*

Of a paler hue than the foregoing species: head and thorax pale whitish or hoary-ash, the latter with a deep-black anterior and lateral line: anterior wings pale silvery white, or hoary, with a clear basal spot on the costa, as in the last-mentioned insect, followed at a short distance by the ordinary second striga, which is of a pale hue and bounded with black posteriorly; the third striga is rather obsolete towards the costa, and is composed of a series of arcuated lines, the points of which extend along the nervures; the space between these strigæ is clouded with brown and bears the stigmata, which are rather large and pale; and behind the third striga whitish, and followed by the usual undulated striga, formed nearly as in the last species, with two distinct black streaks crowning the W: posterior wings whitish-ash, with the margin dusky.

The first sight of this very elegant species seems to remove it from the rest of the genus; its elongated body and more deeply arcuate anterior wings giving it the habit of another group, especially of the *Xylophasie*: but its predominant characters seem to point out the present as its proper genus: it is not very common; but is found throughout the metropolitan district and in Devon-

shire: I have taken three or four specimens near Hertford, and a few at Darenth-wood, in different years.

Sp. 8. *contigua*. *Alis anticis rubro cinereoque nebulosis, strigâ externâ dentatâ albidâ; posticis albidis fusco venosis.* (Exp. alar. 1 unc. 6—7 lin.)

No. *contigua*. *Wien. Verz.*—*Ha. contigua*. *Steph. Catal. part ii. p. 81. No. 6202.*

A variable and beautiful species: head cinereous: thorax the same, varied with hoary and brown, with an anterior striga and an oblique lateral line black: anterior wings prettily varied or clouded with cinereous fulvous and brown, with a whitish spot on the costa at the base and a larger one towards the inner margin, then an oblique white streak arising from the anterior stigma and terminating in a bifid apex near the third striga, and nearly adjoining a larger patch of similar hue near the anal angle; the posterior portion of the wing is pale or cinereous, with a dentated white striga as in the other species of the genus, the angulated posterior crowned with three or four deep black arrow-shaped streaks: posterior wings whitish, with the nervures and hinder margin fuscous.

The colour of this beautiful insect varies greatly: in some examples the anterior wings are adorned with a brilliant purplish tint, and in others the paler marks are elegantly shaded with yellowish.

Caterpillar green, with the head and two spots on the anterior segment of the body brown; stigmata black: it feeds on various plants, but appears to prefer the broom or ragwort: it occurs in August or September, and the imago in the following June.

Found in considerable abundance in certain years in the larva state on broom, in the neighbourhood of Coombe-wood.

† Sp. 9. *obscura*. *Alis anticis cinereo-fuscis, stigmatibus ordinariis, maculisque basi pallidioribus.* (Exp. alar. 1 unc. 7? lin.)

No. *obscura*. *Haworth.*—*Ha. obscura*. *Steph. Catal. part ii. p. 81. No. 6203.*

“Greatly allied to *Ha. remissa* and its affinities, and probably a variety: anterior wings more obscure, or of a fuscous ash, with a large pale spot at the base of the costa, having deep-black lineolæ adjoining internally: towards the posterior margin is a very obsolete undulated slightly pallid striga: posterior wings ashy-brown.”

The above is nearly Mr. Haworth’s description of this obscure insect, which, from an inspection of his specimen, evidently appears to differ from either of the other species, although its characters are perhaps too closely approximating to determine the point satisfactorily, without the occurrence of other specimens.

Of the locality of this species I am not aware.

Sp. 10. glauca. *Alis anticis griseis, maculis ordinariis fuscisq̄ue dentatâ glaucis; posticis cinereis, ciliis albidis.* (Exp. alar. 1 unc. 3—4 lin.)

No. glauca. *Hübner.*—*Ha. glauca. Steph. Catal. part ii. p. 81. No. 6204.*

Head and thorax cinereous, with lutescent clouds and lateral stripe on the latter: anterior wings of a glaucous-ash, rather fulvescent, with three obsolete somewhat pale strigæ, more or less edged with fuscous: the ordinary stigmata glaucous with black or dusky margins, and between them and the inner margin is a bifid ochraceous-ash spot, the point directed towards the anal angle of the wing; on the hinder margin of which is an undulated pale striga, having the W mark less distinct than in the preceding insect: the posterior wings cinereous, with a fulvous tinge, the cilia whitish or ochraceous.

Caterpillar yellowish varied with brown, with a yellowish dorsal line, spotted with black, with some white spots on the sides:—it feeds on the *Tussilago farfara*; and is found about August: the imago appears in June.

This and the two following species, and probably *Ha. ochracea* and *Lithoriza*, differ considerably from the other species of the genus in the structure of their pupæ, which have their hinder segments produced into prominent angles, giving them the appearance of being dentate: the perfect insects also differ too much from the rest, as before mentioned, to allow of their association in the same genus: but at present I have not attempted to disunite them.

Not common: specimens have occurred near London: others near Cheltenham, and in Derbyshire, near Matlock.

Sp. 11. plebeia. *Alis anticis cinereo fuscoque variis maculâ stigmatiformi bifidâ strigâque albidis.* (Exp. alar. 1 unc. 3—4 lin.)

Ph. No. plebeia. *Linné ?—Ha. plebeia. Steph. Catal. part ii. p. 81. No. 6205.*

Head and thorax cinereous, the latter with some dusky or black streaks and clouds and lutescent shades: anterior wings cinereous, with three dusky transverse streaks at the base, adjoining a flavescent spot on the inner margin: the ordinary strigæ are not very evident, and between the second and third the stigmata are placed; these are cinereous, and separated by a quadrate dusky or black space, and a bifid cinereous spot is between them and the posterior margin, as in the last described, the intermediate nervures being whitish, with dusky or black spots, forming somewhat of an angle: near the hinder margin is a dentated whitish or flavescent striga, more or less margined with dusky spots; and in the margin itself is a row of black lunules: cilia cinereous: posterior wings ashy-brown, with a fulvescent tint, and darker margin, behind an obscure dentated pale striga.

This singular insect varies considerably in colour; in fact, two specimens scarcely occur exactly similar; and I suspect that the following species will eventually prove a mere variety:—amongst the numerous varieties, the *Noctua dentina* of the *Wien. V.* has a place; but as the insect is probably the *Ph. No. plebeia* of *Linné*, I have retained that name, as adopted by *Mr. Haworth*.

Caterpillar dirty-brown, with reddish clouds and black lateral and dorsal lines;

head glossy black ; it feeds on the Dandelion (*Leontodon taraxicum*):—the imago is found in June.

Not uncommon in the neighbourhood of London, and in several other parts ; and at Dover, Brighton, in Devonshire, Norfolk, near Birmingham, &c. “Kimpton.”—*Rev. G. T. Rudd*. “Epping.”—*Mr. H. Doubleday*. “Alderley, Cheshire.”—*Rev. E. Stanley*.

Sp. 12. leucostigma. *Alis anticis cinereo-albicantibus arcu obsoleto ex maculis subfulvis composito, in quo stigmata tria albicantia, infimo fisso.* (Exp. alar. 1 unc. 3—4 lin.)

No. leucostigma. *Haworth*.—*Ha. leucostigma. Steph. Catal. part ii. p. 81. No. 6206.*

The propriety of continuing this as a distinct species is extremely questionable : it agrees with the foregoing variable insect, as Mr. Haworth says, “in almost every thing, except being much lighter coloured ; and in being fulvous or subfulvous, or rusty-flavous, in every part where that is brown or black.”

Taken in Coombe-wood, and in other places with the preceding insect.

Sp. 13. ochracea.—*PLATE 23. f. 3. Alis anticis ochraceis strigis stigmatibusque ordinariis pallidis ; posticis albido-fulvescentibus, fimbriâ fuscescente.* (Exp. alar. 1 unc. 3—4 lin.)

No. ochracea. *Haworth*.—*Ha. ochracea. Steph. Catal. pt. ii. p. 81. No. 6207.*

Body and anterior wings ochraceous ; the latter with the ordinary stigmata pale or whitish, frequently edged with a narrow black line ; there is also a third stigmata, as in *Charæas Graminis*, which is usually pale fuscous, with a black edge : the ordinary strigæ, which are placed as in the two last-mentioned species, are pale, but are very frequently accompanied with a series of lunular black spots, as in the figure ; the fourth, or posterior one, being considerably waved, with two or three elongate-trigonate dusky or black streaks towards the centre of its anterior edge ; in the margin is a series of lunato-trigonate spots of a dusky or black hue ; cilia pale luteous : posterior wings fulvescent-white, with a dusky border, and an obscure dusky transverse streak a little behind the middle ; cilia luteous. In some examples the wings are nearly immaculate.

Neither this nor the two preceding and the following species properly associate with the true *Hadenæ*, neither do either of them seem allied to the *Polia*, to which genus the present remarkable and very variable species has been lately removed : the singular cleft pale patch on the anterior wings is however closely analogous to that on the same wings of *Ha. contigua* and others.

This rare species has been occasionally taken near London, and at Brighton ; and I am indebted to my friend J. Scales, Esq. for a beautiful series captured by him about ten years since (in June), near Beachamwell, Norfolk.

Sp. 14. *Lithorhiza*. *Alis anticis cinerascenti-fuscis, fasciâ mediâ irregulari fuscâ, stigmatibus duobus ordinariis cinereis subconfluentibus.* (Exp. alar. 1 unc. 3—4 lin.)

No. *Lithorhiza*. *Bork.*—*Ha. Lithorhiza.* *Steph. Catal. pt. ii. p. 81. No. 6208.*

Head and thorax ashy-brown, with paler transverse shades: abdomen also of the same hue, with its tuft and lateral margins more or less rufescent: anterior wings ashy-brown; with an irregular fuscous fascia in the middle, very much attenuated towards the inner margin, but nearly touching the costa, which is spotted with fuscous; in this fascia the stigmata are placed: they are large, the anterior one composed of two ovate spots, one of which is mostly united to the posterior stigma; a black streak arises at the base of the wing, and unites to the central fascia, and is sometimes continued in a very irregular curved streak to the anal angle; on the hinder margin is a row of irregular subtrigonal fuscous spots; the cilia are very long, cinereous, interrupted by white, with a few black spots at the tip: posterior wings fuscous, the hinder margin with an interrupted darker streak: cilia rosy.

In many points, especially in the early period of its flight, this singular and variable insect differs from the rest of the genus; but I have not ventured to separate it; its comparatively more exposed and hairy palpi, elongate cilia, and obscure posterior striga on the anterior wings, may be noticed as external characters of distinction:—in many respects it approaches towards the genus *Calophasia*.

Not uncommon on trunks of trees, and old palings and walls, during the latter part of April, throughout the metropolitan district. “Southend, in April, 1829.”—*Rev. F. W. Hope*. “Alderley, Cheshire.”—*Rev. E. Stanley*.

Sp. 15. *Cucubali*. *Alis anticis purpurascenti-fuscis, stigmatibus divergentibus flavicinctis, strigâ purpurascente alterâque ad marginem posticum dentatâ flavescente.* (Exp. alar. 1 unc. 4—5 lin.)

No. *Cucubali*. *Wien. Verz.*—*Ha. Cucubali.* *Steph. Catal. part ii. p. 82. No. 6209.*

Head and thorax fuscous, mixed with ashy and black atoms: anterior wings of a purplish-brown, with brighter shades of purple, and darker dusky spots and ashy tints; with the ordinary strigæ black or fuscous, the third geminated and placed on a purplish ground, forming a streak of that hue; the fourth is very much dentated or angulated and yellowish; on the hinder margin of the wing itself is a row of interrupted dusky lunules; the stigmata are divergent, and are elongate and slender, with yellowish margins; the cilia are fuscous, interrupted with pale slender and a little clouded with black: posterior wings ochreous brown at the base, the hinder margin with a deep-brown fimbria, with a very obscure pale striga on its inner margin towards the centre of the wing, where is a dusky spot: abdomen ashy-brown, with darker spots on the back.

Caterpillar greenish, varied with cinereous, with obscure dusky spots; it feeds on

the *Lychnis dioica* and *Cucubalus bacci ferus*: the imago appears towards the middle of June.

Far from a common insect: it has however been captured several times at Darent-wood, where I have twice met with it in the lane leading from the village: it has also occurred in Bedfordshire, and near Cheltenham. “Warwick and Allesley.”—*Rev. W. T. Brec.*

Sp. 16. *capsincola*. *Alis anticis cinereo fuscoque variis, strigâ posticâ dentatâ albâ, stigmatibus albo marginatis.* (Exp. alar. 1 unc. 3—4 lin.)

No. *capsincola*. *Wien. Verz.*—*Ha. capsincola*. *Steph. Catal. part ii. p. 82. No. 6210.*

Not very dissimilar to the preceding species: head and thorax pale ashy-brown, with hoary spots, and transverse and longitudinal dark streaks; anterior wings of an ashy-brown, with a greenish shade, varied with dusky; the usual abbreviated striga at the base whitish; the second and third strigæ pale-fuscous, edged with dusky, with a whitish spot at their origin on the costa; the fourth or posterior striga white or whitish, slightly undulated and triangulated towards the costa and near the middle; stigmata oblique, slender, margined by a white line and rarely united; cilia brown, interrupted with pale ochreous-ash: posterior wings fuscous-ash, with the margin and a slender central lunule dusky; cilia ashy-brown, with a pale streak at the base.

Caterpillar greenish, with blackish spots, and lateral streaks, and a whitish line beneath the latter; the head glossy-brown: it feeds on the *Lychnis dioica*: the imago appears towards the end of June or beginning of July.

Not uncommon in gardens, and weedy banks throughout the metropolitan district: it also occurs in Devonshire, South Wales, Norfolk, &c. “Bottisham.”—*Rev. L. Jenyns.*

Sp. 17. *Saponariæ*. *Alis anticis rufescente-fuscis strigis griseis reticulatis, posticis ochraceo-fuscis fimbriâ fuscâ.* (Exp. alar. 6—8 lin.)

No. *Saponariæ*. *Borkhausen.*—*Ha. ? Saponariæ*. *Steph. Catal. part ii. p. 82. No. 6211.*

A very distinct species; head brown: thorax ashy-brown, with darker stripes, and yellowish or griseous tippets; anterior wings brown with a rufescent tinge, with the nervures and ordinary strigæ griseous ochreous-white, the basal striga deeply angulated, the second abruptly angulated close to the anterior stigma, and then formed into an arch, the crown towards the base of the wing; the third striga placed as usual, and the fourth is rather abruptly angled near the costa, and then runs nearly parallel with the hinder margin, the usual W mark being very slightly indicated; on the margin of the wing itself is frequently an interrupted row of dark or black lunules: stigmata ashy-brown, with pale margins: cilia brown, interrupted by griseous: posterior wings ochreous-brown with a dusky margin: cilia pale.

Caterpillar greenish, with darker shades: the head and first segment brownish: it feeds on the *Saponaria officinalis* and other plants:—the imago appears towards the end of June, or beginning of July.

Rare; four or five specimens have been captured in my presence at Darent-wood, where I once caught a single specimen: it occurs much more abundantly near Brighton; and is found in Norfolk and near Dover. “Bottisham.”—*Rev. L. Jenyns*.

GENUS CVIII.—HELIOPHOBUS, *Boisduval*.

Palpi rather short, stout, porrect, densely squamose, tri-articulate, the terminal joint exposed, but squamose; the basal joint reniform, rather stouter than, and about one-half the length of, the second, which is attenuated at the apex; terminal joint about half as long as the first, elongate-ovate: *maxillæ* very short. *Antennæ* very strongly bipectinated in the males, the pectinations reaching to the apex, furnished with a few distant bristles in the females: *head* small, pilose in front; *eyes* large, pubescent: *thorax* stout, crested: *wings* rather deflexed during repose, the anterior obscurely denticulate on the posterior margin, which is somewhat ample: the nervures generally pale; posterior slightly notched on the hinder margin, towards the costa, pale with a darker border; *body* rather long, stout, of the male with a large tuft at the apex, of the female rather acute, with a small apical tuft: *legs* short, robust, the *femora* and *tibiæ* very pilose; *posterior tibiæ* with two pair of long spurs. Larva naked: pupa subterranean.

The great dissimilarity of the antennæ in the sexes of the only two known species of this genus, at once point out their pretensions for generic distinction from *Hadena*, with which genus all authors but Boisduval have hitherto united them; however, their very great disparity from the typical species of that genus had long determined me to disunite them therefrom: although the species somewhat resemble the three last species of *Hadena*, they may be distinguished with facility by their elongate antennæ,—the males having them strongly pectinated, and the females furnished with bristles; those of the former sex in *Hadena* being not very long, and more or less ciliated, while those of the latter are simple,—and more especially by the brevity of their maxillæ.

Sp. 1. Popularis. *Alis anticis fuscis albido venosis strigâ subinterruptâ ad marginem posticum flavescente, maculis sagittiformibus atris adnatis.* (Exp. alar. 1 unc. 7—9 lin.)

Bo. Popularis. *Fabricius*.—Ph. typicoides. *Don*. xii. pl. 505.—He. Popularis. *Steph. Catal. pt. ii. p. 82. No. 6212.*

Head deep fuscous; thorax fuscous, with darker shades; with a transverse

pale streak, and a lateral white stripe: anterior wings fuscous, with the nervures whitish, and interrupting the ordinary strigæ, which are dusky: the second and third geminated, the latter composed of lunules; the ordinary stigmata are placed between these, and are of a pale flavescent-ash, with darker shades, the anterior is small and circular, the posterior rather slender, and somewhat lunate: there is a third stigmatiform spot, as in *Charæas Graminis*; this is produced from the second striga, and is slightly margined with cinereous with a black edge; towards the hinder margin of the wing is a yellowish slightly waved striga, accompanied on its inner edge with dark arrow-shaped spots: cilia fuscous, with two pale lines: posterior wings whitish, with a deep fuscous margin, a faint undulated transverse striga, and a minute central spot of the same hue: cilia ochreous: abdomen fuscous, with paler margins to the segments: the base and anterior segment clothed with long white or cinereous hair.

Taken abundantly in certain years near London; and in other parts throughout the metropolitan district. Also found near Royston, Herts, at Dover, and not very uncommon near Plymouth, and in Cornwall:—the female is, however, rare. “Bottisham.”—*Rev. L. Jenyns*. “Netley, not uncommon.”—*Rev. F. W. Hope*.

Sp. 2. *leucophæus*. PLATE 24. f. 1. *Alis anticis subdentatis griseo albo fuscoque variegatis; thorace anticè fasciâ fuscâ.* (Exp. alar. 1 unc. 8 lin.)

No. *leucophæa*. *Wien. Verz.*—*He. leucophæus*. *Steph. Catal. part ii. p. 82. No. 6213.*

Head and thorax anteriorly pale ochreous; the latter posteriorly hoary white, with a few dusky atoms intermixed, and separated from the ochreous portion by an indistinct dusky line (of which the rudiments only remain in the specimen whence the accompanying figure, which is of the natural size, was designed): anterior wings variegated with griseous, white and fuscous; the ordinary strigæ being very indistinct, excepting the second, which is somewhat obvious and regularly waved; the stigmata are large, but rather obscure; they are ashy-brown, with dull white or hoary margins; the posterior margin of the wing is nearly white, a little clouded with dusky near the middle; the cilia ochreous at the base, pale whitish ash or hoary at the tip, with a dusky edge, and obsoletely dentate: posterior wings ashy-white, with a dark fuscous central spot and transverse striga; and a faint dusky marginal border: cilia as above.

Of this very conspicuous insect I have as yet seen but two indigenous females, which were captured in July, 1816, near Bristol, whence Dr. Leach received them, and to whom I am indebted for my fine example.



GENUS CXIX.—MAMESTRA, *Ochsenheimer*.

Palpi short, triarticulate, densely clothed with elongate scales at the base, the terminal joint not very distinctly exposed; the basal joint the length of the terminal, subconic; the following as long again, more slender than the basal, subcylindric, a little bent, and slightly attenuated at the tip, which is obliquely truncate; terminal elongate-ovate: *maxillæ* rather long. *Antennæ* elongate rather slender, simple in both sexes, each joint producing a short bristle on each side, ciliated beneath in the males: *head* rather small, the forehead with a dense crest: *eyes* rather large, globose, pubescent: *thorax* subquadrate, with a bifid dorsal crest: *abdomen* moderate, crested on the back, the apex with a small tuft: *wings* slightly deflexed during repose, anterior obscurely denticulate on their hinder margin, posterior simple: *legs* short, stout: *femora* and *tibiæ* very pilose interiorly; tibial spurs moderate. Larva naked, varied. Pupa subterranean.

The species of this genus are usually of dull and sombre colours, and like the *Hadenæ* they are mostly characterized by having a conspicuous W-like mark, formed by the angulations of the pale posterior striga, on their anterior wings. From the genus just mentioned they may be however known, by the greater simplicity of the antennæ in both sexes, the more denticulate posterior margin of the anterior wings, the obscurity of their colours, and by the dissimilarity in the structure of the palpi. *Ma. Aliena* of *Ochsenheimer* appears rather to belong to the genus *Hama*, to be hereafter described.

Sp. 1. *furva*. *Alis anticis fusco cinereo flavidoque variegatis, maculâ reniformis strigâque externâ albicantibus.* (Exp. alar. 1 unc. 5—7 lin.)

No. *furva*. *Wien. Verz.*—*Ma. furva*. *Steph. Catal. pt. ii. p. 82. No. 6214.*

A dingy species: head and thorax fuscous, the latter with some paler and darker atoms: anterior wings fuscous, with cinereous and yellowish shades, the ordinary strigæ of the last line edged with fuscous, the fourth excepted, which is simple, considerably undulated and bidentate in the middle; the stigmata are rather paler than the rest of the wing, with the margins dusky or black, sometimes with a whitish inner circle; the hinder margin has a row of triangular black spots, the margin itself having a yellowish line; cilia fuscous, interrupted with ochraceous: posterior wings ashy-brown, with the nervures, a central lunule, and the hinder margin darker.

Occasionally taken at Coombe-wood, and in other places near London; but much more abundant near Hull, in Yorkshire. I have found it near Dover, and I believe it has been captured in the vicinity of Brighton. (It ill associates with this genus.)

Sp. 2. Pisi. *Alis anticis rufo ferrugineoque variis, strigâ flavescente undatâ ad marginem posticum, maculâque ad angulam ani.* (Exp. alar. 6—8 lin.)

Ph. No. Pisi. *Linné. Wilkes, pl. vii.*—Ma. Pisi. *Steph. Catal. part ii. p. 83. No. 6215.*

A beautiful and extremely variable species: head and thorax ferruginous-red: anterior wings the same, but variegated, and sometimes with yellowish or fuscous clouds; the ordinary strigæ sometimes obscure, at others yellowish with dusky margins: the stigmata rather large, pale, sometimes clouded in the centre with whitish or yellowish, at others plain; towards the hinder margin is a very distinct, much waved and angulate-dentate yellowish striga, varying a little in intensity, being occasionally of a sulphurous hue or nearly white; towards the anal angle it is dilated into a large maculæform patch: cilia ferruginous-red, interrupted with yellowish: posterior wings ochreous brown, with a lunule, the nervures and margin dusky, the latter with a paler striga near the anal angle: behind the middle is occasionally a transverse dusky striga, and the wings are sometimes entirely of the latter hue: the posterior striga is sometimes interrupted.

Caterpillar slender red-brown or ferruginous, with yellow longitudinal stripes: it feeds on the dock, vetch, pea, broom, and other papilionaceous plants, in the autumn: the imago is produced in the following June.

Very common in certain years in the larva state at Coombe-wood, on Hampstead Heath and in Epping Forest: also found in other places near London, and I believe pretty generally distributed over the south of England. “Dublin.”—*Rev. J. Bulwer*, who kindly supplied me with beautiful varieties. “Matloek.”—*Rev. F. W. Hope*. “Newcastle.”—*W. C. Hewitson, Esq.* “Epping.”—*Mr. H. Doubleday*.

Sp. 3. *splendens?* *Alis anticis rufo-fuscis, strigis tribus saturatioribus, externâ albo terminatâ, stigmatibus pallidioribus.* (Exp. alar. 1 unc. 5 lin.)

No. *splendens.* *Hübner?*—Ma. *splendens?* *Steph. Catal. part ii. p. 83. No. 6216.*

Rather less than the last; which it resembles: head and thorax rufous-brown: anterior wings the same, with three darker transverse strigæ, the exterior one terminated by an interrupted white line; the stigmata rather small pale reddish-ash, the anterior immaculate, the posterior with dusky clouds; the cilia interrupted with cinereous: posterior wings ochreous-ash, with the margin, an interrupted transverse striga, central lunule and nervures dusky; cilia flavescens.

A single example of a moth, which answers to Ochsenheimer's specific description of Ma. *splendens*, was taken in Cumberland in July, 1827, by Mr. Weaver, and is in my cabinet: it is the only one I have seen.

Sp. 4. oleracea. *Alis anticis castaneo-ferrugineis maculâ reniformi lutescente strigâque externâ albâ bidentatâ.* (Exp. alar. 1 unc. 6—7 lin.)

Ph. No. oleracea. *Linné.*—Ma. oleracea. *Steph. Catal. part ii. p. 83. No. 6217.*—*Albin. pl. xxvii. f. 4. a—d.*

Head and thorax castaneous, varying in intensity: anterior wings the same, sometimes a little clouded, but in general plain, with the ordinary strige obliterated: anterior stigma pale ashy-brown, small, round, sometimes the margin alone conspicuous; posterior fulvous; in some examples the rudiments of a third stigma are visible, they are sometimes fuscous, at others fulvescent: on the posterior margin is a whitish bidentate striga: posterior wings whitish-ash, with a dusky border.

Caterpillar livid, spotted with black, with a fuscous dorsal and lateral whitish line:—it is polyphagus, but prefers cabbage, lettuces, and similar plants: it is found in the autumn; the imago appearing in the spring, towards the end of May.

Very common in gardens in and about London, and throughout the south of England: “Dublin.”—*Rev. J. Bulwer.* “Kimpton.”—*Rev. G. F. Rudd.* “Netley.”—*Rev. F. W. Hope.* “Bottisham.”—*Rev. L. Jenyns.* “Alderley, Cheshire.”—*Rev. E. Stanley.*

Sp. 5. suasa. *Alis anticis fuscis subnebulosis, lineolâ basi interruptâ nigrâ, strigâque posticâ bidentatâ albâ.* (Exp. alar. 1 unc. 4—5 lin.)

No. suasa. *Wien. Verz.*—Ma. suasa. *Step. Catal. part ii. p. 83. No. 6218.*

Head and thorax fuscous: anterior wings glossy brown, a little clouded with darker shades: with an acute black lineola at the base, and the margins of the stigmata of the same colour; the stigmata of a pale ashy-brown, and situated between two very obscure rather pale strigæ: towards the posterior margin is a white, deeply bidentate striga, with black arrow-shaped streaks on its anterior margin: the cilia and posterior wings are fuscous.

Caterpillar green, with rufescent and bluish spots and three streaks of the latter colour:—it is polyphagous, feeding upon the cabbage, dock, lettuce, plantain, trefoil, &c.: the imago appears in June.

Of this rare insect I have seen but four examples, three of which were captured near London, and one in Norfolk; my specimen, which is the only female I have seen, was taken at Birch-wood in the beginning of July, 1818: it is rather in a tattered condition.

Sp. 6. nigricans. *PLATE 24. f. 2.*—*Alis anticis subochraceo-nigricantibus, stigmatibus strigisque ordinariis pallidioribus.* (Exp. alar. 1 unc. 8 lin.)

No. nigricans. *Vieweg?*—Ma. nigricans. *Steph. Catal. part ii. p. 83. No. 6219.*

Antennæ rusty-luteous; head and thorax pale immaculate dusky-brown, with an ochraceous tinge; anterior wings the same, with obsolete paler and darker

strigæ, and a more distinct slender triangulated one towards the posterior margin: on the costa are several whitish spots, of which the one opposite to the posterior stigma is largest, and adjoins a dusky one: the stigmata are rather obscure, a little paler than the wings, and faintly edged with dusky, and the posterior one with two whitish spots on its hinder edge; on the margin are some indistinct dusky lunate spots: the posterior wings are ochreous white, with the hinder margin and nervures dusky: abdomen dusky-ash.

Two examples of this rare species (the figure of which is rather larger than nature) have hitherto come beneath my observation: one was taken in the New Forest, Hants, or rather, I believe, off Christchurch, by Mr. Bentley, in a bathing-machine, towards the end of June, 1819; and at the end of the following week, a second was picked up by a boy at Darenth-wood: since which period no other specimens have occurred to my knowledge.

Sp. 7. Brassicæ. *Alis anticis fusco-cinereis nebulosis, stigmatibus duabus nigro-cinctis, reniformi albicinctâ, strigâque posticâ bidentatâ albâ.* (Exp. alar. 6—8 lin.)

Ph. No. Brassicæ. Linné.—Ma. Brassicæ. Steph. Catal. part ii. p. 83. No. 6220. *Albin. pl. xxviii. f. 42, 43, &c.*

Head and thorax deep fuscous-black, with cinereous atoms: anterior wings ashy-brown, very much clouded with cinereous, with irregular distinct black strigæ, and another very much undulated and bidentated white one near the posterior margin, which has a row of dusky or black trigonate spots: the anterior stigma is margined with black; the posterior, or reniform one, more or less margined with white; and, as in most of the Agrotæ, there is a third indicated by a black angulated mark: towards the apex of the costa are four white spots: posterior wings fuscous, with the centre and margin darker; cilia pale with a fuscous line.

This species varies considerably in colour; in some examples the cinereous hue predominates, in others the dusky: I possess one example suffused with a rosy tinge, with a distinct ferruginous spot on the inner margin near the base.

Caterpillar very variable green or brown, with white stigmata and an obscure dorsal line: it feeds chiefly upon the cabbage, and is found in the autumn: the imago occurs in the beginning of summer, and remains for a considerable period.

One of the most abundant of the indigenous Noctuidæ, frequenting every garden, and abounding in banks and weedy hedges. "Abundant at Netley."—*Rev. F. W. Hope.* "Bottisham."—*Rev. L. Jenyns.* "Common at Kimpton, and in Yorkshire."—*Rev. G. T. Rudd.*

† Sp. 8. albidilinea. *Alis anticis nigricantibus, strigâ posticâ altè bidentatâ albicante.* (Exp. alar. 1 unc. 7 lin.)

No. albidilinea. Haworth.—Ma. albidilinea. *Steph. Catal. pt. ii. p. 83. No. 6221.*

The size and form of the last: the anterior wings with the ordinary stigmata, and a strongly bidentate striga towards the hinder margin whitish.

I do not believe that this insect is truly distinct from Ma. Brassicæ; but rather suspect that it will prove to be merely a suffused variety of that species, having some of the characters, as usual in such cases, apparently more distinct. The original specimen is in Mr. Hatchett's collection, but I believe a second has been found.

Sp. 9. albicolon. PLATE 24. f. 3. *Alis anticis fusco-griseis, maculâ reniformi punctis duobus albis strigâque externâ flavescente punctatâ.* (Exp. alar. 1 unc. 8—9 lin.)

No. albicolon. Hübner.—Ma. albicolon. *Steph. Catal. pt. ii. p. 83. No. 6222.*

Rather larger than Ma. Brassicæ: head and thorax deep cinereous, mixed with paler and darker shades, with an obscure transverse anterior line: anterior wings of similar hue, a little clouded with fuscous, with several rather obscure darker strigæ, and an interrupted, scarcely undulated, series of distinct yellowish spots in place of the posterior striga: stigmata pale cinereous, the posterior slightly clouded, with two distinct white spots adjoining the posterior angle: the third stigma wanting: posterior wings ochraceous-ash, with the border fuscous: cilia pale.

The total absence of the third stigma on the anterior wings, with the row of flavescent spots near their posterior margin, and the pale ochraceous-ash posterior wings, exclusively of its size and dissimilar colour, sufficiently distinguish this insect from Ma. Brassicæ, with which it appears to have been confounded.

Of this plain, but remarkably distinct, insect I have seen six specimens only, which were captured in August, 1827, by Mr. Weaver, in Cumberland.

Sp. 10. Chenopodii. *Alis anticis fusco-cinereis nigro maculatis, stigmatibus tribus, stigmatè reniformi nigricante, strigâ posticâ bidentatâ albâ.* (Exp. alar. 1 unc. 4—6 lin.)

No. Chenopodii. Wien. Verz.—Ma. Chenopodii. *Steph. Catal. part ii. p. 84. No. 6224. Albin. pl. xxix. f. 44. e—d.*

Head and thorax cinereous immaculate; antennæ fuscous: anterior wings cinereous, with irregular black and pale strigæ and fuscous clouds, with a slender bidentate white striga near the posterior margin, which has a row of minute black spots; the costa is also spotted with dusky-black, with three distinct minute white dots near the apex: the anterior stigma is pale with a dark border, the posterior dusky margined with cinereous and black; there is also a third stigma, as in Ma. Brassicæ, dusky with a black margin, but extremely variable in size: posterior wings cinereous, with the nervures, central spot and margin fuscous.

This insect varies much in colour, and a little in the disposition of its markings. Caterpillar green, with an obscure dorsal and reddish lateral line: it feeds on various pot-herbs like *Ma. Brassicæ* and others of the genus: the imago appears in June.

A very common species, frequenting the gardens and squares of the metropolis itself, and abounding in the former situations throughout its vicinity.

Sp. 11. *Persicariæ. Alis anticis nigris, strigis tribus fusciscentibus, unâque posticâ punctorum fulvorum, stigmatе reniformi niveo lunulâ fulvâ.* (Exp. alar. 1 unc. 6—8 lin.)

Ph. No. *Persicariæ. Linné. Don. ix. pl. 317.—Ma. Persicariæ. Step. Catal. part ii. p. 84. No. 6225.*

Head and thorax black, the latter with a few darker spots; anterior wings also black, with three rather obscure fuscous strigæ, edged with black, and a slightly waved series of fulvous spots near the hinder margin: anterior stigma rather indistinct, with a stigmatiform spot between it and the inner margin, as in the last-mentioned species; posterior stigma pure white, with a fulvous central lunule: on the costa are three or four white spots, and a minute row of the same at the base of the cilia, which are black and indented: posterior wings whitish at the base, with a central lunule, and the hinder margin deep fuscous.

Caterpillar green, with a white dorsal line, and an obscure cloud on the fourth and fifth segment; the tail conic: it feeds on the hop, elder, and other plants; and is found in the autumn: the imago appearing in the following June.

Rather uncommon: I have, however, found several specimens in a garden at Hertford in certain seasons, and occasionally at Ripley; and on Clandon-common, Surrey: it also occurs throughout the metropolitan district. “Allesley.”—*Rev. W. T. Bree.* “Netley.”—*Rev. F. W. Hope.* “Epping.”—*Mr. H. Doubleday.*

APPENDIX.

Page 5. *HEPIALUS hectus.* It should have been remarked, Dr. Leach distinguishes this species in his MSS. as a genus, by the name *Chelonus*, which cannot be retained, as it is preoccupied. “Longnor, Salop, not abundant.”—*Rev. F. W. Hope.* “Rockliff and Castletown.”—*T. C. Heysham, Esq.*

Page 5. *HEPIALUS lupulinus.* “Rickerby, &c., Cumbs.”—*T. C. Heysham, Esq.* “Abundant in Salop.”—*Rev. F. W. Hope.*

- Page 6. *HEPIALUS humuli*. "In some seasons very abundant near Carlisle."
—*T. C. Heysham, Esq.*
- Page 6. *HEPIALUS velleda*. "Littleton Copse, 30th ult."—*Rev. G. T. Rudd*.
"Newcastle, rarely."—*W. C. Hewitson, Esq.*
- Page 7. *HEPIALUS carnus*. "Littleton Copse, with the foregoing, 29th and
30th ult."—*Rev. J. T. Rudd*.
- Page 8. *ZEUZERA Æsculi*. "Lamberhurst, Sussex."—*Rev. F. W. Hope*.
"Near Southwold, Suffolk."—*W. C. Hewitson, Esq.*
- Page 9. *COSSUS ligniperda*. "Abundant at Matlock in 1828."—*Rev. F. W. Hope*.
"Oak woods in the neighbourhood of Black Hale and Floshees."—
T. C. Heysham, Esq. "York, Newcastle, &c."—*W. C. Hewitson, Esq.*
- Page 12. *PYGÆRA bucephala*. "Cummersdale, Rockcliff, Orton, &c."—*T. C. Heysham, Esq.*
"Common in Salop; larvæ called *Highlanders*."—*Rev. F. W. Hope*. "Yorkshire, and Suffolk, very common."—*W. C. Hewitson, Esq.*
- Page 14. *EPISEMA cœruleocephala*. "Common at Netley in 1828."—*Rev. F. W. Hope*.
- Page 19. *CERURA Vinula*. "Harraby, Knells, Brampton, &c."—*T. C. Heysham, Esq.*
- In Mr. Children's collection is a remarkable variety of this insect; having the head and front of the thorax, the hirsuties of the legs and breast of a deep smoky-black; with the wings considerably suffused with a similar hue, but with the ordinary strigæ and fascia: it was found near Brighton.
- Page 21. *STAUROFUS Fagi*. "The male captured several times at Burghfield, by means of a lighted candle, in the evening."—*Rev. C. S. Bird*.
- Page 25. *LEIOCAMPA dictæa*. "Near Rockcliff."—*T. C. Heysham, Esq.*
- Page 25. *LEIOCAMPA dictæoides*. "Old Brompton."—*Mr. G. Waterhouse*.
- Page 27. *LOPHOPTERYX carmelita*. Var. β . With the anterior wings deep fuscous, tinted with reddish; the markings as in var. α . Of this variety there is a beautiful example in the British Museum (the one referred to in page 28); and a very perfect anterior wing of the same variety was picked up in Ongar-park, the 22d of April, 1828, by Mr. H. Doubleday, who kindly transmitted it to me.
- Page 28. *PTILODONTIS palpina*. "Brompton, 1828."—*Mr. G. Waterhouse*.
- Page 33. *PERIDEA serrata*. "Dorking, in 1828."—*Mr. G. Waterhouse*.
- Page 33. *ENDROMIS versicolor*. "Bishop's Castle, and Lenley, Salop."—
Rev. F. W. Hope.
- Page 36. *SATURNIA Pavonia*. "The caterpillar very abundant on Heath on the Bishop's Castle Hills in 1826."—*Rev. F. W. Hope*. "Yorkshire, and near Newcastle."—*W. C. Hewitson, Esq.*
- Page 38. *LASIOCAMPA Rubi*. "Rockcliff Moss."—*T. C. Heysham, Esq.*
"York, &c."—*W. C. Hewitson, Esq.*

- Page 40. *LASIOCAMPA* *Quercus*. "Orton Mosses."—*T. C. Heysham, Esq.*
 "Common at Netley in 1828."—*Rev. F. W. Hope*. "Collingbourne-wood
 in profusion."—*Rev. G. T. Rudd*.
- Page 43. *PÆCilocAMPA* *Populi*. "Very abundant near Birmingham."—*Rev.*
F. W. Hope.
- Page 45. *ERIOGASTER* *Lanestris*. "York."—*W. C. Hewitson, Esq.*
- Page 49. *CLISIOCAMPA* *Neustria*. "Davidson's Bank, near Carlisle."—*T. C.*
Heysham, Esq.
- Page 52. *ODONESTIS* *potatoria*. "Near Woodbank."—*T. C. Heysham, Esq.*
- Page 52. *GASTROPACHA* *quercifolia*. "Near Sheffield."—*Rev. F. W. Hope*.
- Page 59. *DASYCHIRA* *pudibunda*. "Black Hale Woods."—*T. C. Heysham,*
Esq. "Near York; larvæ on beech."—*W. C. Hewitson, Esq.*
- Page 61. *ORGYIA* *antiqua*. "Netley, in August."—*Rev. F. W. Hope*.
- Page 61. *ORGYIA* *gonostigma*. "Bagley-wood, Oxfordshire."—*Rev. F. W.*
Hope.
- Page 64. *LEUCOMA* *Salicis*. "Woods near Cummersdale."—*T. C. Heysham,*
Esq.
- Page 67. *HYPERCOMPA* *Dominula*. "Very abundant at Darent-wood last
 June (1828)."—*Mr. Ingpen*.
- Page 68. *EUTHEMONIA* *russula*. "Common about Birmingham, and near
 Bewdley-forest."—*Rev. F. W. Hope*. Hen-Moss and Tarn Wadling.—*T. C.*
Heysham, Esq.
- Page 69. *ARCTIA* *Caja*. "Dum-hill, Harkes, &c."—*T. C. Heysham, Esq.*
 "Suffolk, York, Newcastle, &c."—*W. C. Hewitson, Esq.*
- Page 72. *NEMEOPHILA* *Plantaginis*. "Southend, &c."—*Rev. F. W. Hope*.
- Page 74. *PHRAGMATOBIA* *fuliginosa*. "Netley, August and September."—
Rev. F. W. Hope. "Castletown and Rockcliff."—*T. C. Heysham, Esq.*
- Page 77. *SPILOSOMA* *lubricepeda*. "Near Ellerby."—*T. C. Heysham, Esq.*
- Page 78. *DIAPHORA* *mendica*. "Near Norwood."—*Mr. Ingpen*.
- Page 82. *FUMEA* *muscella*. "Hornsey and Highgate-woods."—*Mr. Ingpen*.
- Page 83. *NUDARIA* *mundana*. "Common at Netley."—*Rev. F. W. Hope*.
- Page 90. *CALLIMORPHA* *Jacobææ*. "Kingmoor, Orton, &c."—*T. C. Heysham,*
Esq.
- Page 93. *DEIOPEIA* *pulchella*. "A specimen taken near Oxford, and now in
 the Botanic-garden;—last year found at Gravesend."—*Rev. F. W. Hope*.
- Page 97. *LITHOSIA* *quadra*. "Once taken in Harrison-street, Gray's Inn
 Road."—*Mr. Ingpen*.
- Page 98. *GNOFHRIA* *rubricollis*. Whether there may not be two broods of this
 insect I am not positive, but it is certain that the insect is about for a long
 period; having taken it myself in July, and specimens having occurred so

early as the end of May. "Woods near Black Hale and Castletown."—*T. C. Heysham, Esq.* "Bagley-wood, end of May, very common."—*Rev. F. W. Hope.* "Taken in profusion in 1828, early in June; and this year for this fortnight past,—1st June, 1829."—*Rev. G. T. Rudd.*

Page 102. *TRIPHÆNA orbona.* "Durdan and Flosches."—*T. C. Heysham, Esq.*

Page 103. *TRIPHÆNA pronuba.* "New Moss," &c.—*T. C. Heysham, Esq.*

Page 105. *TRIPHÆNA interjecta.* "Netley, very abundant."—*Rev. F. W. Hope.*

Page 106. *TRIPHÆNA Janthina.* "Netley."—*Rev. F. W. Hope.*

Page 107. *GENUS LYTÆA.* This genus, which now contains three indigenous species, in addition to the characters pointed out in the place cited, has the posterior wings with a dark fimbria, and a more or less distinct transverse dusky striga, with a central spot of similar hue; and all the wings very glossy; the anterior considerably rounded at the base.

Sp. 2. *LYTÆA leucographa.* *Alis anticis fusco purpureis albo adpersis, maculis ordinariis albidis.* (Exp. alar. 1 unc. 6 lin.)

Noctua leucographa. Hübner, fig. 572.—*Ly. leucographa. Steph. Catal. Appendix.*

Head and thorax fuscous, with a mixture of fulvous or rufescent; the latter with a transverse dusky streak, followed by a reddish-brown one: anterior wings reddish-brown, varied with white and ochraceous-yellow, with fine purplish or coppery shades; at the base is a slightly bifid black streak, reaching nearly to the second striga, which is rather indistinct and very irregular; the third is considerably bent behind the posterior stigma, and is united to the second by a small black hook on the inner margin; between the posterior striga and the hinder margin is a very faint interrupted pale waved striga, bearing a row of elongate-triangular spots on its anterior edge; the space between this striga and the posterior margin is plain purplish-brown, with the nervures slightly ochreous; and on the margin are some indistinct black dots: cilia reddish-ochre: stigmata whitish, placed in a dusky or black patch: posterior wings ochreous-white, with a central lunule and two transverse strigæ fuscous.

Caterpillar green, with white and brown spots.

My specimen of this insect was taken near York. Hübner seems to have figured two very distinct insects under the above name.

Sp. 3. *LYTÆA albimacula.* *Graphiphora albimacula*, page 137, which evidently associates better with this genus than with the one under which I have doubtingly placed it: it closely resembles the foregoing.

Page 111. *CHARÆAS Graminis.* "Netley, Salop, 1827 and 1828."—*Rev. F. W. Hope.* "Denton, Holme."—*T. C. Heysham, Esq.*

Page 116. *AGROTIS Segetum.* It appears by a letter received from Mr. Kirby, that instead of the larvæ of this insect, it was slugs that were destroyed in such abundance by Mr. Rodwell.

Page 118. *AGROTIS valligera.* "Occasionally near Netley."—*Rev. F. W. Hope.*

Page 120. *AGROTIS vitta.* "Alderley, Cheshire."—*Rev. E. Stanley.*

- Page 126. *AGROTIS* *exclamationis*. "In the utmost profusion in July, 1827, near Netley."—*Rev. F. W. Hope*.
- Page 128. *GRAPHIPHORA* *rhomboidea*. As I suspect that this handsome species is perfectly distinct from the *Noctua rhomboidea* of Esper, I propose calling it *GRAPHIPHORA subrosea*.
- Page 130. *GRAPHIPHORA* *pyrophila*. "Flisk, not Zetland."—*Rev. Dr. Fleming*.
- Page 131. *GRAPHIPHORA* *augur*. "Common at Netley."—*Rev. F. W. Hope*.
- Page 133. *GRAPHIPHORA* *triangulum*. "Rockcliff-moss."—*T. C. Heysham, Esq.*
- Page 136. *GRAPHIPHORA* *plecta*. "Cambridge."—*C. Darwin, Esq.*
- Page 137. *GRAPHIPHORA* *albimacula*. See *Lytæa albimacula*, p. 199.
- Page 144. *ORTHOSIA* *miniosa*. "A single specimen at Netley."—*Rev. F. W. Hope*.
- Page 146. *ORTHOSIA* *Pistacina*. "Epping."—*Mr. H. Doubleday*.
- Page 149. *ORTHOSIA* *Upsilon*. "Epping."—*Mr. H. Doubleday*.
- Page 158. *CARADRINA* *cubicularis*. "Exceedingly abundant, last August, near Netley."—*Rev. F. W. Hope*.
- Page 159. *CARADRINA* *glareosa*. "Of this insect I have taken a fine pair at Epping; one in July, 1827, the other on the 29th August, 1828."—*Mr. H. Doubleday*.
- Page 161. *GLEA* *Vaccinii*. "Kimpton."—*Rev. G. T. Rudd*.
- Page 163. *AMPHIPYRA* *pyramidea*. "New-moss."—*T. C. Heysham, Esq.*
- Page 165. *PYROPHILA* *tetra*. "Kimpton."—*Rev. G. T. Rudd*.

* * The tabular view of the Noctuidæ will be given at the end of the family.

I N D E X.

	Page		Page		Page		Page
AGLIA . . .	36	CA. redacta . . .	155	ER. Lanestris 45, 198	HADENA . . .	179	
Tau . . .	37	Sepii . . .	158	EULEPIA 89, 91	adusta . . .	181	
AGROTIS . . .	112	sordida . . .	157	cribrum . . .	amica ? . . .	180	
æqua . . .	115	superstes . . .	159	grammica . . .	Capsincola . . .	188	
annexa . . .	117	CERIGO . . .	106	EUTHEMONIA 55,	contigua . . .	184	
aquilina . . .	121	texta . . .	107	68	Cucubali . . .	187	
Corticea . . .	114	CERURA . . .	11, 15	Russula ib., 198	Genistæ . . .	183	
cinerea . . .	127	arcuata . . .	17	EUTRICA 36, 50	glauca . . .	185	
cuneigera . . .	123	bicipis . . .	16	Pini . . .	leucostigma . . .	186	
dubia . . .	125	bifida . . .	19	FUMEA . . .	55, 81	Lithoriza . . .	187
exclamationis	126,	erminea . . .	20	Bombycella . . .	83	oblonga . . .	182
fumosa . . .	200	furcula . . .	17	muscella 82, 198	obscura . . .	184	
Hortorium . . .	122	fuscinula . . .	18	nitidella . . .	ib.	ochracea . . .	186
lunigera . . .	113	integra . . .	16	pectinella . . .	83	plebeia . . .	185
nebulosa . . .	127	latifascia . . .	18	pulla . . .	82	remissa . . .	181
nigricans . . .	123	Vinula . . .	19, 197	GASTROPACHA 36	Saponariæ . . .	188	
obeliscata . . .	124	CHAONIA . . .	11, 29	52	satura . . .	181	
ocellina . . .	122	Dodonea . . .	30	Ilicifolia . . .	53	Thalassina . . .	182
pupillata . . .	120	Roboris . . .	ib.	Populifolia . . .	ib.	HELIOPHORUS 189	
radia . . .	119	Querneæ . . .	31	Quercifolia 52, 198	leucophæus . . .	190	
radiola . . .	ib.	CHARÆAS . . .	108	GLÆA . . .	159	Popularis . . .	189
ruris . . .	125	Cespitis . . .	109	polita . . .	162	HEPIALIDÆ . . .	3
sagittifera . . .	119	confinis . . .	ib.	rubiginea . . .	161	HEPIALUS . . .	3, 4
Segetum 115, 199		fusca . . .	ib.	rubricosa . . .	160	carnus . . .	7, 197
subgothica . . .	126	Graminis 111, 199		Satellitita . . .	163	hectus . . .	4, 196
suffusa . . .	116	nigra . . .	110	spadicea . . .	162	Humuli . . .	6, 197
Tritici . . .	121	CLISIOCAMPA 36, 43		subnigra . . .	ib.	lupulinus 5, 196	
valligera 118, 199		castensis . . .	ib.	Vaccinii 161, 200		sylvinus . . .	7
venosa . . .	123	Neustria 49, 198		GNOPHRIA 89, 98		Velleda . . .	6, 197
vitta . . .	120, 199	CLOSTERA 11, 12		rubricollis ib., 198		HETEROGENEA 55,	
AMPHIPYRA . . .	163	anachoreta . . .	13	GRAMMESIA . . .	151	84	
pyramidea 164, 200		anastomosis . . .	ib.	bilinea . . .	152	Asellus . . .	85
ARCTIA . . .	55, 69	curtula . . .	14	trilinea . . .	ib.	HYPERCOMPA 55,	
aulica . . .	71	reclusa . . .	13	GRAPHIPHORA 128		69	
Caja . . .	69, 198	CNETHOCAMPA 36,		albimacula 137,		Dominula ib., 198	
Hebe . . .	71	46		200		HYPOGYMNA . . .	55
matronula . . .	70	pitocampa . . .	48	augur . 131, 200		dispar . . .	56
purpurea . . .	71	processionea . . .	47	baja . . .	134	LÆLIA . . .	55, 62
villica . . .	ib.	Cossus . . .	3, 9	brunnea . . .	131	cænosa . . .	63
ARCTIIDÆ 3, 45		ligniperda ib., 197		candelisequa . . .	132	LASIOCAMPA 36, 38	
BOMBYCIDÆ 3, 35		DASYCHIRA 55, 58		C. nigrum . . .	136	Dumeti . . .	41
CALOCAMPA . . .	172	fastelina . . .	ib.	crassa . . .	130	Medicaginis . . .	40
exoleta . . .	173	pudivunda 59, 198		depuncta . . .	133	Quercus ib., 197	
vetusta . . .	174	DEIOPEIA 89, 92		erythrocephala 134		Roboris . . .	41
CALLIMORPHA 89		pulchella . . .	93	festiva . . .	ib.	Rubi . . .	39, 197
Jacobææ 90, 198		DEMAs 55, 59		latens . . .	129	Trifolii . . .	ib.
miniata . . .	ib.	Coryli . . .	60	lunulina . . .	130	LEIOCAMPA 11, 24	
CARADRINA . . .	154	DIAPHORA 55, 77		musiva . . .	136	dictæa 25, 197	
Alsines . . .	156	mendica 78, 198		nigrum . . .	ib.	dictæoides ib., 197	
ambigua . . .	155	DYPTERYGIA 167		plecta . . .	ib., 200	LEUCOMA 55, 63	
cubicularis . . .	158,	Pinastri . . .	168	pyrophila 130, 200		Salicis . . .	64, 198
200		ENDROMIS 11, 33		punicea . . .	135	Vau-nigra . . .	ib.
glarcosa 159, 200		versicolora 34, 197		renigera . . .	129	LIMACODES 55, 85	
implexa . . .	156	EPISEMA 11, 14		subrosea 128, 200		Testudo . . .	86
levis . . .	157	cæruleocephala ib.		triangulum . . .	133	LITHOSIA 89, 93	
Morpheus . . .	ib.	197		200		aureola . . .	94
		ERIOGASTER 36, 41		132		complanata . . .	95

	Page		Page		Page		Page
LI. depressa .	96	No. perfusca .	23	PÆCILOCAMPA	36	TRICHIURA	36, 42
flava .	95	ziczac .	23		43	Cratægi .	43
gilveola .	ib.	NOTODONTIDÆ	3,	Populi	44, 198	TRIPHÆNA	102
griseola .	96		10	PORTHESIA	55, 65	fimbria .	105
helveola .	94	NUDARIA	55, 83	auriflua .	66	interjecta	105, 199
muscerda .	97	Hemerobia .	84	chrysorrhæa .	65	innuba .	104
plumbeolata .	96	mundana	83, 198	PSILURA	55, 57	Janthina	106, 199
quadra	97, 198	senex .	84	Monacha .	59	orbona .	102, 199
LITHOSIIDÆ	87, 88	ODONESTIS	36, 51	PSYCHE	55, 79	pronuba	103, 199
LOPHOPTERYX	11,	Potatoria	ib. 198	fusca .	80	subsequa .	ib.
	26	ORGYIA	55, 60	PTILODONTIS	11,	XYLINA	168
camelina .	ib.	antiqua	ib. 198		28	conspicillaris	169
carmelita	27, 197	gonostigma	60, 198	palpina	ib. 197	petrificata .	171
cuculla .	ib.	ORTHOSIA	139	PTILOPHORA	11, 29	pulla .	170
LYTÆA	107, 199	cruda .	144	variegata .	ib.	putris .	172
albimacula	137, 199	flavilinea .	148	PYGÆRA	11	rhizolitha .	170
leucographa .	199	gracilis .	141	bucephala	ib. 197	semibrunnea .	ib.
umbrosa .	108	instabilis .	140	PYROPHILA	164	XYLOPHASIA	174
MAMESTRA	191	intermedia .	ib.	tetra ..	169, 200	combusta .	177
albidilinea .	195	litura .	145	Tragopogonis	165	epomidion .	178
albicolon .	ib.	Lota .	147	RUSINA	111	hirticornis .	177
Brassicæ .	194	lunosa .	ib.	ferruginea .	112	lithoxylea .	175
Chenopodii .	195	macilenta .	148	SATURNIA	36	polyodon .	176
furva .	191	miniosa	144, 200	Pavonia-minor	37	rectilinea .	179
nigricans .	193	munda .	141		197	rurea .	176
oleracea .	ib.	pallida .	143	SEGETIA	153	Scolopacina .	178
Persicariæ .	196	Pistacina	146, 200	neglecta .	154	sublustris .	175
Pisi .	192	pusilla .	145	xanthographa	153	ZEUZERA	6
splendens .	ib.	sparsa .	142	SETINA	89, 98	Æsculi	ib. 197
suasa .	193	stabilis .	143	eborina .	100		
MYTHIMNA	149	Upsilon	149, 200	irrorella .	99		
conigera .	151	PENTHOPHERA	55	roscida .	100		
grisea .	150		78	SEMIOPHORA	138		
lithargyria .	151	nigricans .	79	gothica .	ib.		
turca .	150	Rubea .	ib.	SPILOSOMA	55, 74		
NÆNIA	165	PERIDEA	11, 32	lubricepeda	77, 198		
typica .	166	serrata	33, 197	Menthastri .	75		
NEMEOPHILA	55, 72	PETASIA	11, 31	papyratia .	76		
Plantaginis	ib. 198	Cassinea .	32	radiata .	77		
NOCTUIDÆ	87, 100	PHRAGMATOBIA	55	Urticæ .	76		
NOTODONTA	11, 22		73	STAUROPUS	11, 21		
Dromedarius	ib.	fuliginosa	ib. 198	Fagi	ib. 197		

English Names.

<i>Highlanders</i>	197
<i>Hopdogs</i>	59
<i>Lobster</i>	22
<i>Moth, brocade</i>	190
<i>footman</i>	94
<i>Ghost</i>	6
<i>Sprawler</i>	32
<i>Swifts</i>	4

LIST OF PLATES.

PLATE	PAGE
13. f. 1. <i>Hepialus carnus</i>	7
2. <i>Clisiocampa castrensis</i>	48
3. <i>Cerura bicuspis</i> ?	16
14. f. 1. <i>Ptilophora variegata</i>	29
2. <i>Notodonta perfusca</i> ?	23
3. <i>Lophopteryx carmelita</i>	27
15. f. 1. <i>Cerura fuscinula</i>	18
2. ——— <i>bifida</i>	19
3. ——— <i>integra</i>	16
16. f. 1. <i>Clostera reclusa</i> β . ?	13
2. <i>Leucoma Vau-nigra</i>	64
3. <i>Spilosoma Menthastris</i> Var. ϵ	75
17. f. 1. <i>Setina irrorella</i>	99
2. <i>Heterogenea Asellus</i>	85
3. <i>Eulepia grammica</i>	91
18. f. 1. <i>Lithosia aureola</i>	94
2. <i>Nudaria senex</i>	84
3. <i>Psyche fusca</i> ♂	82
4. ——— ♀	ib.
19. f. 1. <i>Graphiphora subrosea</i>	128
2. <i>Orthosia flavilinea</i>	148
3. <i>Lytea albinacula</i>	137
20. f. 1. <i>Agrotis radiola</i>	119
2. <i>Charæa nigra</i>	110
3. <i>Agrotis lunigera</i>	113
21. f. 1. <i>Caradrina glareosa</i>	159
2. <i>Segetia neglecta</i>	154
3. <i>Xylina semibrunnea</i>	170
22. f. 1. <i>Agrotis nebulosa</i>	127
2. ——— <i>annexa</i>	117
3. ——— <i>subgothica</i>	126
23. f. 1. <i>Xylina petrificosa</i>	171
2. <i>Hadena amica</i> ?	180
3. ——— <i>ochracea</i>	186
24. f. 1. <i>Heliophobus leucophæus</i>	190
2. <i>Mamestra nigricans</i> ?	193
3. ——— <i>albicolon</i>	195

ERRATA.

Page 2, line 27, *for cocoons, read cocoons.*

47, — 21, *for nests, read nest.*

55, — 9 and 14, *for pilosæ read pilosi.*

56, — 39, *for stronger, read fainter.*

63, — 40, *for projections, read proportions.*

88, — 7, *for either and or, read neither and nor.*

89, — 32 and 34, *for Ce., read Ca.*

90, — 3 and 4, *for Ce., read Ca.*

91, — 22, *for larger, read longer.*

110, — 29, *for Plate 20. f. 1. read Plate 20. f. 2.*

113, — 29, *for Plate 20. f. 2. read Plate 20. f. 3.*

119, — 15, *for Plate 20. f. 3. read Plate 20. f. 1.*

128, — 34, *for rhomboidea. Plate 19. f. 1. 8. read subrosea. Plate 19. f. 1. 8.*

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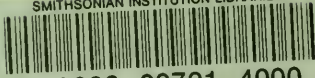
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